

NUCLEAR MONITOR

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Editorial

Dear readers of the WISE/NIRS Nuclear Monitor,

In this issue of the Monitor:

- French nuclear giant EDF is using its controversial sponsorship of the upcoming international climate talks in Paris to launch a greenwashing campaign ... and now there is an opportunity to expose EDF by voting in the Pinocchio Climate Awards.
- We write about fires at three radioactive waste dump sites in the US.
- Dave Sweeney from the Australian Conservation Foundation writes about a wildfire started by uranium miner Energy Resources of Australia in the Northern Territory's Kakadu National Park.
- Entergy has just announced its plan to shut down the FitzPatrick reactor in New York, and the Nuclear Information & Resource Service has co-authored a report showing that the reactor can be replaced by renewable energy at lower cost.
- Oliver Tickell, editor of *The Ecologist*, questions whether the Hinkley C EPR reactors will ever be built.
- Charly Hultén writes about plans to shut down two reactors in Sweden.

The Nuclear News section has items on the launch of a 'Fukushima Freeways' campaign in the U.S.; and a court ruling against nuclear safety activists in Ukraine in a defamation case.

Feel free to contact us if you have feedback on this issue of the Monitor, or if there are topics you would like to see covered in future issues.

Regards from the editorial team.

Email: monitor@wiseinternational.org

Don't Nuke the Climate: Help EDF win the Pinocchio greenwashing award

NM813.4507 Organised by Friends of the Earth France, in partnership with the CRID and Peoples Solidaires-Action Aid France, the Pinocchio Awards highlight the negative impacts of multinational companies – either through lobbying tactics at a policy level, or directly at a community level – and especially those that indulge in greenwashing.

This year, as Paris hosts the international climate talks (COP21), the Pinocchio Climate Awards joins forces with the Worst Lobby Awards, from Friends of the Earth



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Europe and Corporate Europe Observatory to bring a special edition: the Pinocchio Climate Awards.

This year's awards will target multinationals whose activities have a direct impact on the climate and communities around the world, and whose influence, through lobbying, promoting false solutions or greenwashing weakens or destroys climate policies, or undermines action on climate change.



The three worst companies, across three categories, are chosen through an online public vote, and presented with the award at a public awards ceremony.

The French energy company EDF is one of the nominees ... so get voting! Online voting started on November 3 and will be open until December 2. The awards will be presented at a public awards ceremony on December 3.

EDF is using its controversial sponsorship of the COP21 climate talks to launch a large-scale greenwashing campaign to brand nuclear power as a 'carbon-free' and 'clean' energy source. EDF presents itself as 'the official partner of a low-carbon world'. The company is planning a series of conferences and symposia to promote the 'role of electricity in decarbonising the world'. It is also funding a 'call for projects' for non-profit organisations with green projects with a positive impact for the climate.¹

However EDF is not planning to shed any of its considerable global investments in coal and other fossil fuels, nor is it preparing any significant strategic shift towards energy efficiency or renewables. Its main concern is propping up its increasingly compromised nuclear business. EDF, 84% owned by the French state, is strong on nuclear and fossil energy, but weak on renewables.

On its website EDF claims that 87% of the electricity it produces in the world is 'CO2-free'.² In France, according to EDF, the figure is 98%. But that is not because the company is a pioneer of green energy. Renewable energy sources are still very marginal in its global electricity mix, at about 2%. In France, it is only 0.2% (excluding large dams). The main basis for EDF's claim is its huge stake in nuclear power, of which it is the top global producer, with plants in France, the UK, the US, Belgium and China.

EDF runs a fleet of 16 coal power plants globally, including some of the dirtiest in Europe. In 2013, it was rated among the top 20 global multinational emitters of greenhouse gases.³

After a complaint made by the French antinuclear network *Sortir du nucléaire* and some local groups, an official advertising ethics body in France recently issued a damning opinion on a public advertising campaign launched by EDF in Alsace, the French region where the company is fighting against the planned closure of its 37 years old Fessenheim nuclear plant, the oldest in France. The adverts said that the electricity provided by EDF in Alsace was '100% without CO2 emissions' – which the ethics body found was deliberately misleading consumers about the true nature of nuclear energy and its environmental impacts.⁴

Sortir du nucléaire and its partners have now lodged a second complaint, taking aim at EDF's claim that it is providing 98% carbon-free electricity in France. The hearing will take place on 11 December 2015, and then the ethics body will have two weeks to rule on the complaint.⁵

So what does EDF really want? In France, its current agenda is to extend the lifetime of its existing plants – most of them approaching 40 years old and plagued with recurring safety issues. This could cost up to one hundred billion euros. That money should be invested in building the long-term sustainable energy system that France needs. That's no pipedream: a 2015 report by ADEME, a French government agency under the Ministries of Ecology and Research, shows that 100% renewable electricity supply by 2050 in France is feasible and affordable.⁶

Between its huge stakes in fossil fuels and its investment in false solutions such as nuclear, EDF can hardly claim to be an official partner of a "low-carbon world". If it had its way, France and the world would remain stuck in a future of climate chaos, nuclear risk and escalating energy costs.

Source and contact: <http://www.pinocchio-awards.org/>

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USA: Two more reactor shut downs

NM813.4508 An analysis released on October 22 shows that if the FitzPatrick nuclear reactor in New York is shut down, the plant's entire output could be replaced with energy efficiency retrofits and wind power for less money, leaving extra funds free to lower electricity rates or develop even more renewables to replace fossil fuels.¹

The analysis is timely: Entergy announced on November 2 that the loss-making reactor will be shut down in late 2016 or early 2017.²

The key findings of the White Paper, co-authored by Alliance for a Green Economy (AGREE) and the Nuclear Information & Resources Service (NIRS), include:

- FitzPatrick's electricity generation could be replaced with energy efficiency and wind at less than the current cost of electricity from the nuclear plant.
- Diverting all of FitzPatrick's revenue to clean energy could result in additional reductions in greenhouse gas emissions, equivalent to a 264 MW coal plant or 330 MW combined cycle natural gas plant.
- Replacing FitzPatrick with efficiency and wind could create more than twice the number of jobs (1400) currently provided by Entergy at FitzPatrick (600).
- Municipalities and workers affected by FitzPatrick's closure could be supported through the economic transition for a lower cost than subsidizing FitzPatrick, if the state proactively negotiates with Entergy for a responsible and immediate decommissioning.

NIRS Executive Director Tim Judson said: "Aging reactors like FitzPatrick are becoming uneconomical and uncompetitive, even as they are becoming less safe and reliable. Raising costs on electricity customers to keep FitzPatrick from closing would be enormously expensive, and could cause negative economic impacts throughout the region. Our analysis shows FitzPatrick can be replaced with renewable energy and efficiency, at a lower cost than current electricity prices, without subsidies. And it doesn't need to stop there. More fossil fuel and nuclear power plants could be replaced the same way. New York has an enormous opportunity to become a leader in the clean energy economy, build new industries, and create employment both in Oswego and throughout the upstate region."

Local elected officials and supporters of FitzPatrick have been rallying to try to save FitzPatrick. In letters to the Governor and to the Public Service Commission, they are calling for a subsidy like the one proposed for the Ginna reactor in neighboring Wayne County (which is currently estimated at about US\$70 million a year), or a change to market rules to favor nuclear power over other energy sources. Either way, consumers would likely foot the bill if the state were to decide to subsidize the reactor. AGREE and NIRS conservatively predict

that subsidy could cost National Grid customers at least US\$40 million a year, totaling at least US\$760 million if FitzPatrick operated that way until 2034, when its operating license expires.

A petition to shut FitzPatrick, pursue renewables, and provide for a just transition for workers and local communities has been launched by AGREE and can be found at www.beyondFitzPatrick.org.

Pilgrim reactor in Massachusetts

On October 13, Entergy announced that the Pilgrim reactor in Massachusetts – which the Nuclear Regulatory Commission had downgraded to one of the worst performing reactors in the country – will close in or before 2019.

Michael Mariotte from NIRS wrote on the safeenergy.org blog:³

"A generation or so ago, New England was one of the most nuclear-dependent regions in the nation. If one defines New England as including New York, then that relatively small corner of the U.S. map was home to 15 commercial nuclear reactors 25 years ago – only the state of Illinois had a more concentrated nuclear presence; regionally, no other area is even close to that concentration on a square-mile basis.

"Today, New England is leading the nation away from nuclear power, and toward the energy efficient, renewables-powered system of the 21st century. The news from Entergy that it will close its Pilgrim reactor by mid-2019 – and probably a whole lot sooner – is just the latest manifestation of that process, and it's a process that is accelerating.

"It is probably not a coincidence that for the past 25 years, New England has been home to the most active anti-nuclear movement in the U.S. The shutdowns started with Yankee Rowe in 1992, which wanted to become the first reactor in the U.S. to receive a 20-year license extension and instead closed for good when Citizens Awareness Network proved it was too unsafe to operate. Then came Millstone-1, followed by Connecticut Yankee and Maine Yankee in 1996. Last year, it was Vermont Yankee that ended operations.

"In Pilgrim's case, Entergy admits it is losing US\$10–40 million (and think the higher figure) per year just trying to run that obsolete Fukushima-clone reactor. And actually trying to bring Pilgrim up to basic Nuclear Regulatory Commission safety standards, which it does not meet – the NRC has rated Pilgrim and two other Entergy reactors in Arkansas as the worst in the nation – would cost many millions more. So for Entergy, the decision was easy: cut its losses now, and avoid spending money to make the safety improvements."

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UK: Will Hinkley C ever be built?

Author: *Oliver Tickell – Editor of The Ecologist*

NM813.4509 On October 21 the big deal was announced. David Cameron and Chinese President signed their nuclear memorandum. And in a separate deal, EDF, owner of the Hinkley C nuclear power project in Somerset, UK, signed its deal with Chinese state-owned nuclear power company China General Nuclear Power Corporation.¹

The government also announced that the terms of its offer to EDF on the Hinkley Plant were finalised. Cue sounds of champagne corks popping, strains of ‘for he’s a jolly good fellow’ ...

But the nuclear deal is not all it seems. In fact it’s a veritable dogs’ dinner of surprises, quirks and oddities which throw up many more questions than answers. And it still leaves the key question wide open. Will Hinkley C ever actually be built? For all the claims that EDF’s ‘final investment decision’ is a mere formality that will be made in weeks, it is no such thing. In fact, there is more reason than ever to doubt it. The official announcement, speeches and press releases may give the firm impression that it’s all a done deal. But look harder and it’s all stitched together with paperclips and sellotape and could fall apart at any moment.

First, the money – £6 billion is not enough

The first anomaly is that CGN will pay £6 billion for a 33.5% share in the Hinkley C project, presumably buying into what is now a wholly-owned subsidiary of EDF, the NNB Generation Company (NBB GenCo).

That’s on the basis, claimed by EDF, that the project cost will be £18 billion. Now if that were the case, that would leave EDF with another £12 billion to find. Which is still a lot of money. But in fact, it’s much worse than that.

But the cost has been reliably estimated by EU Competition Commissioner Joaquin Almunia at £24.5 billion – including the considerable costs of financing the construction through to completion.² In fact, he warned that if the project encountered problems the cost could end up as high as £34 billion, a figure accepted by EDF boss Laurent de Rivaz.

Given the massive problems encountered at the other sites using the same EPR reactor design, it would surprise no one if huge problems were encountered. The Flamanville EPR project in France and the Olkiluoto EPR project in Finland are both running roughly three times over the initial project cost and nine and eight years over time, respectively.³

The Ecologist also understands, following information from a well-placed industry insider, that construction ceased at the 4-reactor EPR project in Taishan, China, in mid-2014. This has not been officially announced. EDF owns 30% of the project, and CGN, EDF’s Hinkley C partner 70%.

It would be foolhardy indeed to enter into the Hinkley C EPR project without having a secure funding line for, say, £25 billion lined up. Without that, investors in the project

would risk running out of money before completion – with billions of pounds sunk in a doomed project.

Seen in that context, CGN’s £6 billion investment is nowhere near enough. So where might the other £19 billion come from?

Raising debt not an option

The obvious answer is debt. You go to the bank, and borrow the money. But then this is a risky business. China Development Bank, Bank of China and Société Générale are already heavily exposed to Taishan and may now have cut off new funding to the project.

But that’s alright, isn’t it? Because the Hinkley C project has had £17 billion of UK Treasury Construction Finance Guarantees approved by the European Commission. An initial £2 billion was recently announced by Chancellor George Osborne during his recent visit to China.

These guarantees will grant security to bondholders in the project ensuring that their capital and interest are paid no matter what. But there’s a catch. Under the deal agreed with the Commission, the Flamanville EPR project must be up and running before the guarantees come into effect. And until that time, the shareholders must provide billions in ‘contingent equity’ to cover the bondholders’ risk, protecting UK taxpayers.

Flamanville was meant to be finished in 2012, but it’s running late thanks to severe technical and safety problems, and under the latest project update, EDF does not expect it to be complete until 2020.⁴ And under the terms of the Commission’s approval, if Flamanville is not up and running by the end of 2020, the UK’s guarantees expire and bondholders must be repaid from shareholder equity.

What this means is that there is now a near-zero chance of these guarantees ever actually being taken up. Osborne’s £2 billion promise in Beijing was a smokescreen. And without those guarantees, who is going to lend their money to the project?

The difficulty has been as good as admitted by EDF, which states, “The project is due to be equity funded by each partner, at least during a first stage.”¹

So what’s left?

That leaves EDF with two options. One is to sell additional equity in the project, and the other is to self-finance. Selling more equity in Hinkley C is certainly possible, even though the only buyer is likely to be CGN or one of its companion Chinese nuclear parastatals.

However EDF insists that it will keep a majority share in the project. So it can only sell a maximum of 15.5% to keep its own 51% – say for around £2 billion. Which still leaves it £17 billion short of the £25 billion it needs to be safe, and £10 billion short of its own cost estimate.

EDF can also self-finance and flog off its assets. And that’s exactly what EDF is doing – seeking to raise €10

billion by selling its Italian subsidiary Edison and its share in U.S. nuclear company CEGN, and possibly a Polish coal mine, as reported in the *Financial Times*.⁵ But that still leaves it many billions of pounds short.

The company could also take on more corporate debt. Except it's already carrying far too much. According to a Bloomberg report in February this year, "Electricite de France SA's new Chief Executive Officer Jean-Bernard Levy is struggling to control the utility's ballooning debt as Europe's biggest power generator faces an investment peak this year ... Net debt climbed 2.4 percent to 33.4 billion euros (US\$38 billion) last year."⁶

As for selling shares into the market, there may be few takers. EDF's falling share price has given its shareholders a loss of almost 16% over the last year.

Heavy demands on EDF cash

And EDF's problems don't end there. Flamanville problems cost EDF an unscheduled €2 billion last year, with more expected to clock up this year and in years to come. Losses at Taishan have not been declared but are surely running into billions.

And then, there is the Areva problem. Areva, another French parastatal nuclear corporation, is essentially bust thanks to a variety of mishaps including a failed US\$2.5 billion uranium mine in Canada and its woes at Flamanville, where it supplied a defective steel reactor vessel which has now been incorporated into the structure. It also has problems at Olkiluoto, and at Taishan as well, where it also supplied the reactor vessels which may suffer from the same defects. It posted an eye-watering €4.8 billion loss for 2014.

The French government's answer is for EDF, which is not quite as bust as Areva, to buy into the company, buying a majority 51% to 75% stake for €1.3 billion to €2 billion.⁷ But of course the liabilities won't end there – as a basket case company with rising global liabilities Areva is sure to soak up more cash for many years to come.

And then there is the potentially enormous cost that EDF faces going forward in decommissioning its ageing fleet of nuclear power plants in France, the UK and other countries – just as its revenue stream from those reactors is cut off. These and other factors led Moody's to downgrade EDF's credit rating in April with 'negative outlook'.⁸

Another surprise – a twin EPR for Sizewell

In a footnote to EDF's press release comes another big surprise. The Sizewell C nuclear project in Suffolk is to use a twin EPR design presumably modelled on Hinkley C: "EDF and CGN have signed the Heads of Terms of an agreement in principle to develop Sizewell C in Suffolk to a final investment decision with a view to build and operate two EPR reactors. During the development phase EDF will take an 80% share and CGN will take a 20% share."

It's a surprise because most people have written off the EPR as a dead duck reactor. Following its Olkiluoto experience, for example, Finland has cancelled a second EPR project⁹ and no new orders are coming in. But also because it's hard to conceive how on Earth EDF could finance its 80% share when it's already facing such a

flood of liabilities and demands for cash, and no working EPR is likely to materialise for some years to come.

As for the 'Hualong' HPR1000 reactor design that CGN (66.5%) and EDF (33.5%) are to build at Bradwell in Essex, it's an entirely untested 'never built' Chinese reactor type, that represents a fusion of two other 'never-built' reactor designs, China's ACPR1000 and ACP1000.¹⁰

The ACP1000 is a purely paper reactor, while 'third generation' ACPR1000s are under construction at the Yangjiang nuclear complex in western Guangdong with a scheduled completion date of 2019.¹¹ Three actual HPR1000s are under construction at Hualong 1 and CGN's Fangchenggang units 3 and 4, the official 'reference plant' for the design of the UK's Bradwell reactor.

What these have in common with the EPR design is that no actual working reactor of the HPR1000 or its two antecedents the ACPR1000 and the ACP1000 has ever been completed.

So where do we go from here?

There is a very real possibility that EDF will be unable to raise the cash to proceed with Hinkley C.

Not helping EDF is the warning from two leading rating agencies, Moody's and Standard & Poor, to further downgrade EDF's credit rating in the event that it pursues the Hinkley C project, because of the dangers of big cost overruns and delays to EDF's untested EPR French reactor technology.¹²

Huge questions must also hang over the Sizewell and Bradwell nuclear projects – the first saddled with a known failed and never-built reactor design, and the second with a never-built reactor design that is a hybrid of two other never-built reactor designs.

China's long term strategic ambitions

But for all the impediments it's likely that the programme can be delivered, eventually, if China is prepared to pump in enough money – and if EDF is prepared to give up enough control and equity. Which raises the question: What's in it for them?

There is one likely answer. Hinkley C and other planned UK nuclear power stations give them a remarkable opportunity to penetrate and occupy not only the UK's nuclear establishment but France's as well.

With no other investor willing to put money into France's failing nuclear companies or the UK's increasingly desperate nuclear ambitions, China's motivations are surely not purely economic, even if there is money to be made.

It is rather that China has perceived a vulnerability and has decided to exploit it for its own long term strategic, industrial and geopolitical advantage. Remember here that the UK and France are both nuclear weapons states and permanent members of the United Nations Security Council increasingly seen as punching above their weight.

Deliberate under-financing is the oldest trick in the book for rapacious venture capitalists. You find a company in trouble, inject some cash, but not enough, and some more cash, but still not enough, and a few years down

the line you're either running the company or winding it up and making off with its assets.

It may be that Chinese money will see the Hinkley C, Sizewell and Bradwell nuclear projects carried through

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to completion, probably accompanied by big Chinese buy-in to Areva and EDF. But China's help will come at a very high price.

Abridged from The Ecologist, 22 Oct 2015, www.theecologist.org

E.ON prevails: Two Swedish reactors to be shut down

Author: Charly Hultén – WISE Sweden

NM813.4510 In July, *Nuclear Monitor* reported that German power company E.ON announced its intention to shut down two of Sweden's oldest reactors in Oskarshamn between now and 2020 (NM #807, July 30).

Minority owner Fortum (45%) vehemently opposed the decision. So determined was Fortum that it even talked of buying out E.ON (54%) and taking over OKG, which operates three reactors in Oskarshamn. That was in early September. Nothing came of it.

In a last-ditch effort to save the reactors, Fortum and union representatives voted against the proposal in the OKG Board of Directors on September 30, which forced E.ON to take the issue to the shareholders. An extraordinary general meeting, held on October 14, confirmed the decision: O1 and O2 will be shut down.

The decommissioning process – lasting probably a decade or more – will get under way in 2017. Actually, O2 has been offline for nearly two and a half years for upgrading. That project is said to have cost €850 million. The reactor will never produce another kilowatt-hour.

E.ON's decision rested on two 'feet': (1) the company strives to develop sustainable energy sources, and (2) the two aged reactors at Oskarshamn are running at a loss – when they are actually running – due chiefly to the current drop in energy prices and unforeseen safety-related investments in the wake of the Fukushima disaster. E.ON's analysts see no prospect of profitability, even in the longer term.

Conversely, Fortum claims that shutting down the two reactors will cost it €700 million. The company's

financial report for January – September 2015 does not specify the claim in detail, but the above-mentioned upgrading of O2 surely accounts for a major share. Roughly 25–30% of the amount would appear to refer to future payments to the waste and decommissioning fund that otherwise would be covered out of power sales. Fortum has opted to book the entire €700 million in the third quarter, this year.

The loss of O1 and O2 – smallish reactors whose combined output is no more than 1,111 MW – is not expected to have any palpable effect on the future price of electricity in the Nordic energy market. But the impact in Oskarshamn will be substantial. 500 of OKG's currently 900 employees will lose their jobs, and OKG is the major employer in the community of roughly 26,000 people. E.ON has expressed hopes that the reduction can be achieved through pension agreements.

The shutdowns will also impact the finances of Karlstad, a municipality distant from Oskarshamn, which has held a 2.13% share in OKG for some fifty years. Once a 'cash cow' for the municipality, ownership of OKG in recent years has been a burden, and divestment has been debated repeatedly in the local government. In 2013–2014, OKG cost the community, with a population of 89,000, a net €270,000. Altogether, Karlstad has more than €64 million locked in OKG in the form of loans and credit guarantees. What E.ON's decision will cost Karlstad in the next decade remains to be seen. At face value, it ought to be 2.13% of the total cost. Some of the total may be covered by funds already paid into Sweden's decommissioning and nuclear waste fund, but far from all.

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Fires and radioactive waste

Author: Jim Green – Nuclear Monitor editor

NM813.4511 In the last issue of the Nuclear Monitor we reported on the smoldering underground fire that has come within 350–400 metres of a radioactive waste dump, the West Lake Landfill, in the U.S. state of Missouri. The site has been in the news again with an above-ground brush fire on October 24, started by a faulty switch inside the landfill's perimeter. The fire was doused before it reached the area containing radioactive waste. The EPA sent a letter reprimanding site operator Republic Services for the incident.¹

On October 26, about 300 local residents attended a 'Community Advisory Group' meeting to discuss the West Lake Landfill smoldering fire (which has been burning since 2010) and the October 24 fire. Many are sceptical about the reassurances provided by government and company representatives. "I'm scared," said Darlene Hartman, a life-long resident. "You try to eat healthy, you try to be good citizens. And you don't know who to trust."²

Nevada fire

On October 18, a fire broke out at a radioactive waste dump in southern Nevada. The fire followed flash flooding that shut down the town's escape routes: U.S. 95 and Highway 373. County officials and law enforcement agencies declared an emergency. The site, operated by U.S. Ecology, is home to 22 low-level radioactive waste storage trenches that range in size from shallow holes to chasms hundreds of feet deep and wide as football fields.³

Associated Press reported on October 25:⁴

"The operator of a closed radioactive waste dump that caught fire in southern Nevada last weekend was troubled over the years by leaky shipments and oversight so lax that employees took contaminated tools and building materials home, according to state and federal records.

"A soundless 40-second video turned over by the firm, U.S. Ecology, to state officials showed bursts of white smoke and dirt flying from several explosions on 18 October from the dump in the brown desert, about 110 miles north-west of Las Vegas.

"In the 1970s, the company had its license suspended for mishandling shipments – about the same time state officials say the material that exploded and burned last weekend was accepted and buried.

"Nevada now has ownership and oversight of the property, which opened in 1962 near Beatty as the nation's first federally licensed low-level radioactive waste dump. It closed in 1992. State officials said this week they did not immediately know what blew up.

"A state fire inspector, Martin Azevedo, surveyed the site on Wednesday. His report, obtained on Friday by the Associated Press, described moisture in the pit and "heavily corroded" 55-gallon drums in and around the 20ft-by-30ft crater. Debris from the blast spread 190ft. Two drums were found outside the fence line. ...

"In 1979, the then Nevada governor Robert List ordered the Beatty low-level waste facility shut down and launched an investigation after a radioactive cargo fire on a truck parked on U.S. Highway 95, at the facility gate.

"The fire came three years after employees were dismissed for stealing radioactive building materials, tools and even a portable cement mixer, according to a 1994 report prepared by the Idaho National Engineering Laboratory.

"Operations at Beatty resumed "only after assurance was given by the federal government that the rules governing shipments ... would be enforced," according to the Idaho lab report.

"List expressed doubt that anyone will ever know what is really underground at the site. 'Good luck with that,' he said. "What we found when we did our investigation was they had very, very skimpy records about what was there."

The Nevada Department of Public Safety said in an October 19 statement that high altitude and intermediate altitude testing resulted in negative readings for radiation. The Department said it would initiate an investigation to determine the cause of the fire.⁵

WIPP fire

The underground chemical explosion at the Waste Isolation Pilot Plant (WIPP) in Nevada on 14 February 2014 has generated huge public and media interest ... so much so that a fire that occurred nine days earlier has been all but forgotten.⁶ A truck hauling salt caught fire on 5 February 2014. The fire consumed the driver's compartment and the truck's large front tires. Six workers were treated at the Carlsbad hospital for smoke inhalation, another seven were treated at the site, and 86 workers were evacuated.

A March 2014 report by the Department of Energy's Accident Investigation Board blamed Nuclear Waste Partnership (NWP), the contractor that operates the WIPP site. The Accident Investigation Board said the root cause of the fire was NWP's "failure to adequately recognize and mitigate the hazard regarding a fire in the underground. This includes recognition and removal of the buildup of combustibles through inspections, and periodic preventative maintenance, e.g., cleaning and the decision to deactivate the automatic onboard fire suppression system."⁷

In 2011, the Defense Nuclear Facilities Safety Board, an independent advisory board, reported that WIPP “does not adequately address the fire hazards and risks associated with underground operations.”⁸

Spent fuel pools and reactors

Fire could result in a catastrophic accident if it compromised spent nuclear fuel pools. U.S. Nuclear Regulatory Commission staff calculated that if even a small fraction of the inventory of a Peach Bottom reactor pool were released to the environment, an average area of 9,400 square miles (24,300 square kilometers) would be rendered uninhabitable, and that 4.1 million people would be displaced over the long-term.⁹

Reactors are also at risk. The Union of Concerned Scientists noted in a 2013 paper: “Fire poses significant risk to nuclear power plant safety. The Nuclear Regulatory Commission (NRC) estimates that the risk of reactor meltdown from fire hazards is roughly equal to the meltdown risk from all other hazards combined – even assuming that plants comply with fire protection regulations, which many do not. Because of this risk, the NRC established a set of fire safety regulations for nuclear plants in 1980 and an alternate set in 2004. However, today – more than 30 years after those regulations went into effect – nearly half of U.S. operating nuclear reactors do not comply with either set of regulations.”¹⁰

A report found that there were around 100 fire incidents at nuclear sites in France in 2011 – reactors, reprocessing plants and other nuclear sites. The dangers must be “taken very seriously”, said Jean-Christophe Niel, managing director of national nuclear safety regulator ASN. About 10 of the 100 fires were considered significant in terms of nuclear safety, Niel said.¹¹

A 2013 report by the U.S. Department of Energy details many of the interconnections between climate change and energy. It noted that power lines, transformers and electricity distribution systems face increasing risks of physical damage from wildfires that are growing more frequent and intense.¹²

Peaceful nuclear explosions

The nexus between fire and nukes is an altogether unhappy one. If there is an exception, it is this unlikely yarn about ‘peaceful nuclear explosions’ from the science and culture blog *io9*:¹³

“All in all, nuclear civil projects were a massive mistake. There was one use, though, that seemed to work. The Soviet Union tried it several times, and actually had

some success: it turns out nuclear bombs are great ways to put out fires. That’s not as unimpressive as it sounds! Underground fuel reserves are vast stores of combustible material that cannot be reached by human firefighters, but can quite merrily burn. Coal, peat, and gas fires can burn for decades. Centralia, Pennsylvania had a coal seam that caught fire in 1962 and is still burning. The Urtabulak gas field caught fire in 1963. It burned steadily for three years. In 1966, the Soviet Union decided to do something about that.

“The gas fire was ventilated by the holes that had been drilled to harvest the gas; if the holes could all be sealed shut, the fire would go out. Naturally, no one could go into a vast gas fire to shovel earth into a deep hole. Geologists and physicists calculated that a nuclear explosion equal to about 30 kilotons of TNT could seal shut every hole within about 50 meters. The rock would basically melt over the fire. In the fall of 1966, a special nuclear bomb was detonated in one of the holes, and fire was out in 23 seconds.

“But if it’s not one thing, it’s another. Within a few months of that fire going out, a new fire, in another gas field, erupted. In 1968, the Soviets dropped a bomb into that one. This took longer. For a few days, rock and other earth flowed into the holes, but eventually it worked. The fire went out. In 1972, another well was sealed off after it caught fire. The last known attempt at sealing a gas fire with a nuclear weapon was done in 1981, and it did not work out. The scientists couldn’t get accurate data on the location of the vents in the well. The bomb went off, but the well never entirely sealed shut.”

Finally, if there is a nukes-and-fire story more bizarre than the use of ‘peaceful nuclear explosions’ to put out underground gas fires, it involves U.S. shipyard worker Casey James Fury, who in May 2012 was having problems with his ex-girlfriend and wanted to leave work early. So, naturally, he set fire to a nuclear submarine. The USS Miami sustained US\$450 million damage in the blaze, and Fury was given a 17-year jail sentence.¹⁴



USS Miami on fire.

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Australian uranium miner in the firing line over Kakadu burn

Author: *Dave Sweeney – nuclear-free campaigner with the Australian Conservation Foundation.*

NM813.4512 The smoke has finally started to settle over Australia's largest national park. For a week in mid-October, World Heritage-listed Kakadu National Park burnt following the escape of a 'controlled' fire lit by the uranium mining company Energy Resources of Australia (majority owned by Rio Tinto) against the advice of the Northern Territory fire service. This was the second year in a row a 'controlled' burn lit by ERA turned into an uncontrolled wildfire.

In a case of good luck rather than good management, no one was seriously injured but, as the flames die down and the damage assessment and questions start up, more of ERA's shrinking credibility has literally gone up in smoke.

While the full extent of the damage is not yet known, the fire burned over 200 square kilometres, causing significant environmental damage and threatening ancient and important Aboriginal art and cultural sites.

The Kakadu environment is a living landscape – dynamic, peopled and inter-connected as was seen in the comments of the Gundjeihmi Aboriginal Corporation which represents the regions Traditional Owners, the Mirarr people. ERA's failure to contain this fire demonstrates that nature does not discriminate between a uranium mining lease and a world heritage-listed national park. This is one continuous landscape and this situation has huge implications for the future rehabilitation of the mine site.

Rehabilitation is increasingly the main game at ERA's embattled Ranger mine. The mine has a finite operational window, with mining and mineral processing

required to end in January 2021 to be followed by a mandated rehabilitation period during which the site needs to be repaired to a standard suitable for inclusion in the surrounding national park.

Following the fire the Mirarr Traditional Owners formally conveyed their continuing opposition to ERA's attempts to extend operations at Ranger past the 2021 date.

Recent years have seen ERA focussed on plans for a new underground mining operation at Ranger, the so-called Ranger 3 Deeps (R3D) project. For many stakeholders and industry observers ERA's pursuit of the project in the context of a depressed commodity price, an under-performing operation and a narrowing window for operations made scant sense.

In June, ERA's parent company Rio Tinto agreed, pulling the plug on R3D plans and instead offering to fund ERA's extensive, outstanding and soon to be called in rehabilitation costs on the proviso that ERA undertake no further mining at Ranger. In the words of a senior Rio Tinto source Ranger's future lies not in mining but rather in "remediation, remediation, remediation."

And the remediation challenge is profound. The impact of 30 years of mining has seen massive impact and the creation of multiple long term contamination plumes and pathways.

There have been over 200 hundred leaks, spills and incidents at the Ranger mine and there are severe and unresolved problems with the management of contaminated water and mine wastes. The mine plant is at the end of its design life and equipment and infrastructure is aging and failing.

This was starkly highlighted in December 2013 when a major leach tank failed spilling over one million litres of radioactive and acidic slurry. A subsequent site review commissioned by ERA confirmed the long held concerns of many stakeholders that the aging and failing plant is at full stretch. The review also raised serious questions about the adequacy of both infrastructure and management systems at Ranger, finding that the mine had 35 other failed or at risk pieces of critical plant infrastructure or equipment with the potential for major human safety or environmental impacts in operation at the time of the tank collapse.

Whether the threat is from wildfire, leaking tailings dams or toxic mud, in too many ways and over too many years ERA's operations have damaged and threatened Kakadu.

The freefall in the price of uranium since the Fukushima nuclear disaster – a continuing crisis directly fuelled by Australian uranium – has seen the uranium sector losing market share, share value and money. Since Fukushima ERA has posted years of consecutive losses that now total more than A\$1 billion. The company is cutting costs and corners and posing an increasing danger to Kakadu.

The history of uranium mining in Kakadu has been one of broken pipes and broken promises. Sustained Aboriginal, environmental and wider community

opposition and resistance has seen the development of Jabiluka halted and the threat of mining at nearby Koongarra averted. Kakadu's remaining radioactive running sore is the under-performing Ranger mine and it is time the wound is dressed. ERA has failed and it is now time for Rio Tinto to give effect to its corporate responsibility rhetoric and to commence a considered and comprehensive Ranger exit strategy.

Federal Environment Minister Greg Hunt has committed to an inquiry into the fire. This is welcome but any inquiry needs to be open and transparent, not simply another yellowcake whitewash.

Also welcome is the Northern Land Council's call that the federal government reinstate traditional Indigenous fire management practises across Kakadu. This would reduce the chances of damaging late dry season burns and massive greenhouse gas emissions and potentially open the door to future post mining income streams through measured carbon farming and abatement.

Kakadu has been burnt but it is ERA who should be in the firing line. The company lacks the commitment, capacity and competence to conduct such a dangerous trade in such a special place and the recent fire is further proof that it is time to close the chapter on uranium mining in Kakadu.

NUCLEAR NEWS

USA: Fukushima Freeways

Thousands of intensely radioactive nuclear waste shipments would cross U.S. roads, rails and waterways if plans for the country's first, and scientifically indefensible, nuclear waste repository in Nevada move forward. On October 27 the Nuclear Information & Resource Service (NIRS) released maps of the likely routes radioactive shipments would use, joining dozens of environmental and clean energy groups across the country. The groups want residents to weigh in with Congress and decision-makers about the dangers.

Department of Energy studies completed in the 1990s confirmed that accidents in transporting the waste to Yucca Mountain would be a near certainty, due to the large number of shipments that would be required. The shipments would also be vulnerable to attack or sabotage along the hundreds or thousands of miles that each cask would travel.

Some in Congress want to force a nuclear waste dump to open in Nevada, over President Obama's and the state's objections as well as that of the Western Shoshone Nation. The president has defunded the proposed Yucca Mountain repository since 2010, effectively abandoning the controversial project, while Nevada is certain that the site is not suitable for storing nuclear waste and opposes the project. Nevada controls land and water rights the federal government would need to complete the project. To overcome that obstacle, Congress would need to enact a law

overriding the state's rights. Doing so would then open the door for the nuclear waste shipments to begin.

"Congress should stop wasting time and money on Yucca Mountain which should have been disqualified long ago for its technical inability to isolate nuclear waste," said Tim Judson, NIRS Executive Director.

Large-scale nuclear waste transport would also occur if, as some in Congress advocate, a "centralized interim storage" site for high-level radioactive waste were created. In that case, the waste would either have to move twice (once to the interim site, and then to a permanent site), thus doubling the risks or the "interim" site would become a de facto permanent waste dump--without going through the necessary scientific characterization.

The Stop Fukushima Freeways website has a wealth of information about the issues and risks associated with nuclear waste transportation:

www.nirs.org/fukushimafreeways/stopfukushimafreeways.htm

Ukraine court rules against nuclear safety activists in defamation case

On October 29 a court in Kiev ruled against activists from the National Centre of Ukraine (NECU) in a defamation case. The lawsuit by the state's nuclear company Energoatom suppresses public debate about the risks of Ukraine's outdated reactors – a debate that



must also be held in neighbouring countries affected by the risks of the plants continuing operation.

The lawsuit referred to a press release from 15 May 2015 in which NECU reported on the state nuclear regulator's decision to shut down the nuclear unit once it reached its design lifetime because the insufficient safety standards at the time did not allow prolonged operation.

"Nuclear safety is one of the pressing issues facing Ukraine. But today's court ruling makes clear that the state can guarantee neither nuclear safety nor public debate," said Iryna Holovko, Bankwatch's national campaigner in Ukraine.

Despite the case attracting international attention, the Ukrainian government appears keen to block the public debate, not only at home but also abroad. International treaties oblige Ukraine to launch environmental impact assessment and public consultations in neighbouring countries before extending the lifetime of the Soviet-era reactors. The European Commission has acknowledged

this requirement, and the authorities in at least three neighbouring EU countries have already approached their Ukrainian counterparts on the matter, but Kiev so far refuses to cooperate. Neighbouring governments and the European Union have already expressed their wish to be involved in decisions about Ukraine's zombie reactors (bankwatch.org/zombiereactors).

The court ruling will not stop NECU from campaigning for an open discussion and a proper assessments of the risks. Please help us by telling others what is happening right now on Europe's doorstep and share the message on Facebook (<http://tinyurl.com/fb-necu>) and signing up for email campaign updates (bit.ly/UAgagged or <http://bankwatch.org/nucleartruth>).

– Sven Haertig-Tokarz, Bankwatch

More information:

<http://bankwatch.org/our-work/projects/nuclear-power-plant-safety-upgrades-ukraine>

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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