

# NUCLEAR MONITOR

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## Editorial

Dear readers of the WISE/NIRS Nuclear Monitor,

In this issue of the Monitor:

- Kumar Sundaram writes about the repression and intimidation of the anti-nuclear movement in India;
- Charlotte Mijeon writes about the nuclear power debate in France, in particular draft 'energy transition' legislation which does very little to challenge the status quo;
- Eloi Glorieux writes about the nuclear power debate in Belgium, which is delicately poised in the aftermath of the recent election;
- Jim Green writes about the remarkable defeat of a nuclear waste dump plan by Aboriginal Traditional Owners in Australia's Northern Territory – and the broader problem of 'radioactive racism';
- Mary Olson writes about the regulation of radiation exposure in the US; and
- Philip White writes about the 'reform' of the Japan Atomic Energy Commission.

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.

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## Sanity on nuclear policy is foreign to the Indian government

**Author:** *Kumar Sundaram – Research Consultant with the Coalition for Nuclear Disarmament and Peace (CNDP), India, an affiliate of the World Information Service on Energy (WISE).*

**NM788.4396** In the same week that France decided to lower its appetite for nuclear energy and increase its reliance on renewable sources, the Indian home ministry started hounding Greenpeace for its role in 'stalling India's development' by opposing nuclear power and genetically modified organisms. A crackdown on other anti-nuclear networks like the Coalition for Nuclear Disarmament and Peace (CNDP) and the People's Movement Against Nuclear Energy (PMANE) is being widely anticipated.

The crackdown followed a confidential report by India's premier internal intelligence agency, the Intelligence



## Monitored this issue:

<b>Sanity on nuclear policy is foreign to the Indian government</b> – Kumar Sundaram	1
<b>Legislation on France's Energy Transition: a long-running soap opera</b> – Charlotte Mijeon	3
<b>Safety concerns may speed-up nuclear phase-out in Belgium</b> – Eloi Glorieux	5
<b>The nuclear war against Australia's Aboriginal people</b> – Jim Green	7
<b>Dose versus risk in US regulation of radiation exposure</b> – Mary Olson	9
<b>Reform of the Japan Atomic Energy Commission: as if Fukushima never happened</b> – Philip White	10

Bureau, titled "Concerning efforts by select foreign funded NGOs to 'take down' Indian development projects". The 21-page report named a number of prominent anti-nuclear activists like Praful Bidwai, Achin Vanaik, Admiral Ramdas, and Surendra Gadekar as well as a number of organisations. Activists have raised questions about how the report made its way to the media before reaching the ministries and the Prime Minister's office. S.P. Udayakumar, a leading activist against the Koodankulam nuclear power plant, has taken the Indian government to court, highlighting the serious

threat to his life posed by the media frenzy over the report. He fears for his life, stating in a recent interview:

*"I am a threat to nuclear energy. I am a threat to the global nuclear industry. The governments of India, Russia, France and America are all together now. We are a threat to all of them. Their business interests are hurt. They are going to dump their outdated technology on the hapless people of India. We point out their faults and so we are being targeted. Unfortunately some people in this country believe these stories. That is the irony of it. This is becoming a threat to my life and to the security of my family. When they name me like this. When they call me – an Indian – a security threat for whatever reasons, it sends a wrong message to the wrong people. When I walk on the streets someone may say here goes a traitor and attack me. I might get killed. My school has been attacked twice. You know my people were attacked inside the Tirunelveli collector's office in full view of the public. If something happens to me the Intelligence Bureau and the Government of India are responsible. By maligning me and putting my life at risk."*<sup>1</sup>

Anti-nuclear activists organised a press conference in Delhi in late June calling the Intelligence Bureau report unacceptable 'scare-mongering' on the part of the government to malign local agitations and to further repress them. Achin Vanaik, an academic and leading anti-nuclear voice, said that: "We are concerned that the ground is being prepared, by whom we cannot say, to oppose and discredit a whole range of popular movements by targeting NGOs that are providing support to such struggles and resistances. We are fearful that this is a kind of witch-hunt with longer term implications to repress all kinds of popular struggles."<sup>2</sup>

## Criminalising dissent

The Intelligence Bureau report reduces the diverse political landscape of India – comprising Gandhians, leftists, tribal movements, funded NGOs and activists who despise them, spontaneous protests and organised groups, academics and independent researchers – to a homogenous block bent on putting roadblocks to the Indian growth dream. Linking all aspirations for a safer and cleaner future for India to foreign instigation, the report seeks to criminalise dissent.

Raising the 'foreign hand' bogey against anti-nuclear activists is not new in India. In the course of the massive people's resistance to commissioning of the Koodankulam reactor, former Prime Minister Manmohan Singh blamed US-based NGOs for instigating protests against the Russian-imported reactors. Soon, this malignment from the top political level translated into brutal police violence against the villagers. Fisherfolk's houses and boats were ransacked, two agitators were killed, hundreds were arrested (including women and teens), passports were confiscated from the youth in the area who used to work in the Arabian gulf countries, and outrageous British-era charges of sedition and 'war against the Indian state' were levelled against thousands of protesters.

But the recent Intelligence Bureau report takes this repression further and seeks to securitise 'development'. In the first paragraph, it blames various NGOs and people's struggle for a 2–3% loss in the country's GDP. While several reputed commentators and policy experts have called such assessment ridiculous<sup>3</sup>, the report reflects the ruling elite's mindset in which the any opposition to its own collaboration for profiteering global corporates is deemed anti-national. Initial steps of the newly elected BJP government include opening the gates

A fisherman was shot dead by police during this protest against the Koodankulam nuclear power plant.



to 100% foreign direct investment in sensitive sectors like defence, and seeking to dilute environmental stipulations for big industries, mining and mega-projects.

The massive expansion of nuclear energy envisaged by the Indian government is itself a direct result of the government's commitment to the nuclear supplying countries. India made advance promises for reactor purchases from France's Areva, Russia's Atomsroyexport and US giants like Westinghouse and GE in exchange for these countries' support for an exemption for India at the Nuclear Suppliers' Group (NSG) in 2008. India was thus permitted to engage in international nuclear commerce despite its status as a nuclear weapons state outside the Nuclear Non-Proliferation Treaty.

It is under the pressure of the commitment to the international nuclear lobby that the Indian government has been bulldozing everything that stands in their way – undermining and diluting safety norms<sup>4</sup>, pushing through environmental clearances at gun-point<sup>5</sup>, neglecting the adverse economics of these projects<sup>6</sup>, crushing grassroots

democratic dissent, and trying to exempt the nuclear suppliers from liability in the event of any accident.<sup>7</sup>

The Intelligence Bureau report mentions other people's struggles to protect the environment and traditional lifestyles – such as movements against corporate-led mining, coal plants, big hydro dams and GM-crops etc. It has a separate section on the people and activist groups who criticised the development model of the Gujarat state, whose Chief Minister has now become the Prime Minister. The Gujarat model has been notorious for its corporate friendliness – tax holidays, cheap land acquisition and huge subsidies for big industrial houses in the face of rising inequality and malnutrition.

While such ostrich-like attitudes suit the national security hawks, the democratic ethos is under grave threat in India. One can only hope that in a country that fought hard against colonialism to attain freedom and nurture a democracy, such attempts will eventually be thwarted by the majority.

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## Legislation on France's Energy Transition: a long-running soap opera

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**NM788.4397** On 18 June 2014, the French government unveiled parts of its draft legislation on energy transition, which is due to be voted on in early 2015. Incoherent, containing hidden clauses, with EDF's fingerprints all over it: it falls well short of the sweeping legislation required to bring about a genuine transition.

### A long-awaited piece of legislation

It goes without saying that in France, effective legislation on energy transition, based on reducing consumption and moving to renewables, is essential and urgent. We need measures and guidelines to ensure the speedy closure of ageing reactors to make way for the development of alternatives, and bring to an end the waste of billions of euros on an outdated technology. For months, reports have been piling up, like so many warning signs, reminding us of the need for a rapid change of direction: a study by Greenpeace on the estimated costs of the work needed to patch

up old power stations; warnings from the Nuclear Safety Authority on the risks of extending the lifespan of reactors beyond 40 years; warnings from the Court of Auditors of a 21% increase over three years in the production costs of nuclear power.

Effective energy transition legislation would also provide a clear answer to the famous proposal to “reduce the proportion of nuclear energy to 50% by 2025”, which can be interpreted any way one likes. Does it mean closing down the reactors, as required by the agreement between the Socialist Party and Europe Ecology / The Greens – and even as some high-ranking civil servants are advocating? At the Parliamentary Inquiry on Nuclear Costs led by Councillor Denis Baupin (Deputy Mayor of Paris), members of the General Directorate of Energy and Climate surprised people when they said that renewable forms of energy, if combined with a reduction in the consumption of electricity, between now and 2025, would eliminate the need for about twenty nuclear reactors.

Or does the 50% nuclear proposal mean allowing all forms of energy production to increase, which would then automatically lead to a reduction in the proportion produced by nuclear power, as advocated by EDF?

### **A surreal press conference**

But the energy transition legislation, which should be being discussed this autumn and then voted on at the beginning of 2015, is a long way from meeting these challenges. The Minister of the Environment, Ségolène Royal, set the tone on June 18 at a press conference to unveil the draft policy.

After singing the praises of green technology, denouncing “punitive ecology” (“I have got rid of all the restrictive legal regulations”), and a quarter of an hour of self-satisfaction about “her” achievements in Poitou-Charentes, Ségolène Royal launched into a detailed description of her plans for the electric car, “The cleanest car in existence”. Charging points, car parks, traffic lanes ... you name it! And the role of nuclear power in all of this? Completely side-stepped.

Still not satisfied, a journalist asks her: does she anticipate reducing the consumption of electricity, which is the only measure that would allow nuclear power stations to be closed? “Look, there will be targets. We’re not going to do battle over the figures,” she answered curtly.

A representative from the Network “Sortir du Nucléaire” who has slid into the room, comes straight to the point: how does she envisage reducing the part played of by nuclear power? Does she intend to close power stations? “We are not abandoning nuclear power; that is not the choice we have made. I would even go as far as to say that it is thanks to the nuclear energy we have today and the security it provides that we are able to bring forward energy transition and achieve it smoothly.” Followed by, “I don’t want the different forms of energy production to be set against each other; now is not the time for confrontations, for ideological battles.” Presumably, while avoiding ‘confrontations’, she will also be dodging questions about the future of the ageing Fessenheim nuclear power plant ...

### **EDF continues to direct energy policy**

“The question is not a matter of who has control but of doing what is good for the country,” insists Ségolène Royal, apparently confusing the public interest with that of EDF. In fact, the text of the draft legislation contains nothing that would impose any constraints on the energy company at all. No limits have been set on the operating lifetime of nuclear power stations. And above all, the government still has no power to close a nuclear power station as part of its energy policy. It will have to content itself with proposing directions as part of its Long-term Energy Programme which EDF is then certain to reject. But nothing guarantees that this will allow the government to demand the closure of reactors.

Ségolène Royal speaks of an ‘intelligent and fruitful dialogue’ with EDF and her intention to respect the

decisions of a company which is listed on the Stock Exchange. Her words make one fear that the government does not dare to push for any major changes. The decision to make the necessary closures, given the age of the nuclear power stations, will have to wait ...

The legislation makes no explicit recommendations to reduce nuclear electricity production and leaves the door wide open to the progressive replacing of nuclear reactors. The impact study that accompanies the text of the draft also refers to the ‘marginal’ EPRs beyond 2030 and the development of new nuclear technologies over the next few decades. As a tiny concession to ecologists, nuclear production will be capped at its current level: no new nuclear power stations will be brought online unless others have been closed down. According to this logic, will we have to wait until the EPR is brought on line before Fessenheim is finally closed.

### **A surreptitious clause has been smuggled into the legislation**

Not only does it lack any radical measures, but the text also contains two clauses on the subject of radioactive waste and in particular Cigeo, the proposed underground storage site in the Meuse. In fact, since December 2013, there has been a draft proposal on the subject of underground storage and the implementation of the 2011 European directive on radioactive waste (notably authorising EU countries to receive nuclear waste from other member countries). More than 50 associations wrote an open letter to the government demanding withdrawal of the clauses. However, at the beginning of June, Ségolène Royal maintained that all references to underground burial of radioactive waste had been withdrawn from the text, stating to the President of Friends of the Earth, “If they want to do it, they will, but not within the terms of MY legislation!”

On the day of the press conference, there was no mention of Cigeo. But in the text that was sent the same evening to members of the National Council for Energy Transition, we were unpleasantly surprised to discover a clause recommending that the European directive be implemented and another proposing that a future burial site be decided *by decree*, even though it was supposed to be the subject of a legal process! We immediately voiced our objections along with the group BURE-STOP and Friends of the Earth.

On the evening of June 20, we finally learnt that the government had in fact withdrawn the clause that dealt specifically with Cigeo (the clause concerning the European directive remained however), to the great displeasure of the local politicians involved in promoting the project. We need to remain vigilant and make sure that the withdrawal of the clause is permanent; but this small victory does show that mobilising can pay off!

The case is not yet closed! Between now and when the law is voted on, we will continue to lobby all Deputies to try to counter the influence of EDF and to make them aware of the urgent need for a genuine transition.

# Scandals in the French nuclear industry

Prosecutors have opened a preliminary investigation into EDF CEO Henri Proglio for allegedly funnelling some of the public company's money to his wife, comedian Rachida Khalil. Proglio denied the allegations, but he said of his wife's business affairs, "Her accounting is artistic, just as she is."<sup>1</sup>

A draft report by the public auditor (Cour des Comptes) is highly critical of Areva's activities in the 2006–2012 period. The report, leaked to the media, was critical of a 3 billion euro loss due to delays and cost overruns on an EPR reactor under construction in Finland, and Areva's 2007 acquisition of uranium miner UraMin, amongst other things. The audit said that, with the exception of its mining and renewable energy business, Areva's financial track record for big projects was not satisfactory: "The numerous cost overruns indicate optimistic forecasts and insufficient anticipation of difficulties."<sup>2</sup>

Areva's 2013 net loss was 494 million euros, compared to 99 million euros in 2012, due to provisions on the reactor project in Finland and losses in its renewable energy business.<sup>3</sup>

France's financial prosecutor has opened a preliminary investigation into Areva's \$2.5 billion acquisition of

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Canadian uranium mining company UraMin in 2007. French daily *Le Monde* reported that the prosecutor is investigating possible "presentation or publication of inaccurate or untrue accounts", "distribution of false or misleading information", and "forgery". Uranium prices fell following the UraMin purchase, and the company's reserves, mostly in Africa, turned out to be lower than initially estimated, forcing Areva to take a write-down of close to 1.9 billion euros over the years 2010 and 2011. Areva's internal audit into the deal pointed to shortcomings in corporate governance but did not reveal fraud or question the reliability of the company's accounts. The internal report acknowledged that presentations made to state holding company APE and to Areva's board had not given enough prominence to doubts expressed by Areva's technical teams.<sup>3,4</sup>

In early June, Areva's headquarters and the homes of former executives were searched as part of the UraMin investigation. A judicial source told Reuters that a total of 11 searches had been carried out. An Areva spokesperson said: "Our headquarters in the La Defense district have been the object of a search by the financial prosecutor following the referral by the state auditor. The company is cooperating."<sup>5</sup>

– Nuclear Monitor

## Safety concerns may speed-up nuclear phase-out in Belgium

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**NM788.4398** In November 2013, the Belgian parliament voted a new nuclear phase-out law.<sup>1</sup> The main modification in relation to the 2003 phase-out law is that the Tihange 1 PWR got a lifetime extension of 10 years and will remain operational till 2025. The decommissioning schedule of the other six PWR's remains unchanged: Doel 1 and 2 in 2015; Doel 3 in 2022; Tihange 2 in 2023; Tihange 3 and Doel 4 in 2025. Tihange 1 will be 50 years old when it has to close in 2025, the others will be 40 years.

### What will the new government do?

Does this mean that the nuclear phase-out calendar is set in stone once and forever? Not at all. Two important recent events may alter it in both directions: a delay or a speed-up. The first event is the result of the May 2014 federal election. It remains unclear which parties will

form a new government, but the prospects are that a centre-right coalition will come into power. The biggest party now is the Flemish nationalist N-VA, which openly advocates a review of the phase-out law. The N-VA argues for a 10 year lifetime extension of all reactors and a replacement of the existing fleet by new thorium reactors in 2035.

The most likely coalition partners MR (French-speaking Liberals) and CD&V (Flemish Christian Democrats) supported the new phase-out law in November 2013, but are sensitive to arguments about security of supply. Nuclear provides over 50% of Belgium's electricity and the country is already an importer of electricity. The most fervent defenders of the nuclear phase-out in the previous government, the Flemish Social Democrats, will most likely end up in the opposition.

## Forced shut-down of Doel 3 and Tihange 2

On the other side are the inherent risks connected to ageing nuclear power plants which may result in an even earlier shut-down than determined by the phase-out law. Doel 3 and Tihange 2, both 1,000 MW PWR's, have been plagued for two years by serious safety issues. In the summer of 2012, respectively over 8,000 and 2,000 flaw indications had been detected in the reactor pressure vessels of Doel 3 and Tihange 2, resulting in the sudden shut-down of both reactors.

In January 2013, the nuclear regulator FANC identified a set of 11 requirements that the operator GDF-Suez/Electrabel had to fulfil before a restart of both units could be considered.<sup>2</sup> In April 2013, the operator submitted an action plan that included answers to FANC's pre-restart requirements. On 17 May 2013, FANC concluded that all safety concerns underlying the restart requirements had been resolved and consequently, after nearly one year, Doel 3 and Tihange 2 started up again.<sup>3</sup>

Although the director of FANC, Jan Bens, announced at the press conference that both reactors were 101% safe, independent experts warned that it was irresponsible to restart them. In January and March 2013, materials scientist Ilse Tweer concluded from FANC's evaluation report that too many questions remained unanswered to justify a restart.<sup>4</sup>

After an in-depth analysis of all the published documents from the operator, the regulator and the official review teams, a group of seven independent experts presented a report in March 2014 which concluded that not all the necessary investigations were carried out before permission was granted for the restart.<sup>5</sup> FANC linked a couple of important actions to the authorisation of the restart in May 2013, but allowed the operator to complete them by the end of the first reactor cycle after the restart, which was scheduled by June 2014.

One of these actions was the completion of tests into the impact of radiation on the materials properties of samples with hydrogen flakes. The material toughness tests were performed in the BR2 research reactor at the national nuclear research center SCK in Mol. The

results of these tests indicated that the mechanical properties of the material are more strongly influenced by radiation stress than assumed by the theoretical models. Such tests had never been performed in the world before and the results may be more far-reaching than only Doel 3 and Tihange 2.

On 25 March 2014, GDF-Suez/Electrabel informed FANC about the alarming test results and "as a precautionary measure" decided once again to shut down Doel 3 and Tihange 2.<sup>6</sup> Shortly after the first test results, a second accelerated irradiation program was started at the BR2 research reactor in Mol. On 12 June 2014, operator GDF-Suez/Electrabel announced that the mechanical tests and metallurgic assessments of the irradiated samples from this second irradiation program will run at least until autumn 2014. Meanwhile, Doel 3 and Tihange 2 will remain closed.

## Nuclear dependence endangers security of supply

Since their unanticipated shut-down in the summer of 2012, Doel 3 and Tihange 2 have only produced electricity for eight months. Elia, the operator of the power transmission grid in Belgium, is rather pessimistic that both reactors will ever restart again and CREG, the national regulator for the power and gas market, is already preparing emergency measures to prevent black-outs during the winter of 2014–2015. This becomes even more crucial because, in addition to the forced shut down of the 2,000 MW capacity of Doel 3 and Tihange 2, the nuclear phase-out law mandates the decommissioning of Doel 1 and Doel 2, both 450 MW reactors, in 2015.

For environmental organisations such as Greenpeace, the situation demonstrates that to depend on an ageing nuclear reactor fleet for over 50% of power supply is to endanger the security of supply. The answer to this challenge is not to extend the lifetime of nuclear reactors, but to invest in an accelerated structural change of the system: from centralised, unflexible nuclear baseload, to decentralised and flexible renewable energy sources and increased energy efficiency.

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# The nuclear war against Australia's Aboriginal people

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**NM788.4399** The nuclear industry has been responsible for some of the crudest racism in Australia's history. This radioactive racism<sup>1</sup> dates from the British bomb tests in Australia in the 1950s and it has been evident in more recent debates over nuclear waste.

Since 2006 successive federal governments have been attempting to establish a national nuclear waste dump at Muckaty, 110 kms north of Tennant Creek in the Northern Territory. A toxic trade-off of basic services for a radioactive waste dump has been part of this story from the start. The nomination of the Muckaty site was made with the promise of \$12 million compensation package comprising roads, houses and scholarships. Muckaty Traditional Owner Kylie Sambo objected to this radioactive ransom: "I think that is a very, very stupid idea for us to sell our land to get better education and scholarships. As an Australian we should be already entitled to that."

While a small group of Aboriginal Traditional Owners supported the dump, a large majority were opposed<sup>2</sup> and some initiated legal action<sup>3</sup> in the Federal Court challenging the nomination of the Muckaty site by the federal government and the Northern Land Council (NLC).

The conservative federal government passed legislation – the Commonwealth Radioactive Waste Management Act 2005 – overriding the Aboriginal Heritage Act, undermining the Aboriginal Land Rights Act, and allowing the imposition of a nuclear dump with no Aboriginal consultation or consent. After the 2007 election, the Labor government passed new legislation – the National Radioactive Waste Management Act (NRWMA) – which was almost as draconian and still permitted the imposition of a nuclear dump with no Aboriginal consultation or consent.<sup>4</sup>

Radioactive racism in Australia is bipartisan – both the Labor Government and the conservative Liberal/National Opposition voted in support of the NRWMA. Shamefully, the NLC supported legislation disempowering the people it is meant to represent.

Labor's Resources Minister Martin Ferguson drove the disgraceful NRWMA through parliament. He refused countless requests to meet with Traditional Owners opposed to the dump. Muckaty Traditional Owner Dianne Stokes said: "All along we have said we don't want this dump on our land but we have been ignored. Martin Ferguson has avoided us and ignored our letters but he knows very well how we feel. He has been arrogant and secretive and he thinks he has gotten away with his plan but in fact he has a big fight on his hands."

Dianne Stokes has not been alone. Many Traditional Owners were determined to stop the dump and they have been supported by Natalie Wasley from the Beyond

Nuclear Initiative, a *pro bono* legal team, key trade unions including the Australian Council of Trade Unions, church groups, medical and public health organisations, local councils, and environmental groups such as Friends of the Earth and the Australian Conservation Foundation.

The Federal Court trial finally began in June 2014. After two weeks of evidence, the NLC gave up and agreed to withdraw the nomination of Muckaty.<sup>5</sup> The announcement came just days before the NLC and government officials were due to take the stand to face cross-examination. Kylie Sambo said: "I believe [the NLC] didn't want to go through that humiliation of what they really done. But it's better now that they actually backed off. It's good for us."

Lorna Fejo, a Traditional Owner whose story was highlighted in then Prime Minister's Kevin Rudd's National Apology in 2008, said: "I feel ecstatic. I feel free because it was a long struggle to protect my land."

Marlene Nungarrayi Bennett said: "Today will go down in the history books of Indigenous Australia on par with the Wave Hill Walk-off, Mabo and Blue Mud Bay. We have shown the Commonwealth and the NLC that we will stand strong for this country. The NLC tried to divide and conquer us but they did not succeed."

Dianne Stokes said: "We will be still talking about our story in the communities up north so no one else has to go through this. We want to let the whole world know that we stood up very strong. We want to thank the supporters around the world that stood behind us and made us feel strong."

After the celebrations, one immediate challenge for Muckaty Traditional Owners is to continue their campaign to have land council boundaries shifted so they can be represented by the Central Land Council instead of the NLC. Kylie Sambo said: "Hopefully we can continue to try and push the boundary for the NLC back up north a bit. We had a good trust there but then they broke it. It's going to be tough, we stood and fought for eight long years and I think we can take on anything now."<sup>6</sup>

What did self-styled Aboriginal leaders such as Warren Mundine<sup>7</sup> and Noel Pearson have to say about the Muckaty dispute? Nothing. In eight years they never once spoke up in support of Muckaty Traditional Owners. Likewise, Australia's self-styled 'pro-nuclear environmentalists' – Adelaide University's Barry Brook, uranium industry consultant Ben Heard, and others – never once voiced concern about the imposition of a nuclear dump on an unwilling Aboriginal community and their silence suggests they couldn't care less about the racism of the industry they so stridently support.



Muckaty Traditional Owners and supporters.

### Dumping on South Australia

The failed attempt to establish a dump at Muckaty followed the failed attempt to establish a dump in South Australia. In 1998, the federal Howard government announced its intention to build a nuclear waste dump near Woomera. Leading the battle against the dump were the Kupa Piti Kungka Tjuta, a council of senior Aboriginal women from northern SA.<sup>8</sup> Many of the Kungkas personally suffered the impacts of the British nuclear bomb tests at Maralinga and Emu in the 1950s.

The proposed dump generated such controversy in SA that the federal government hired a public relations company. Correspondence between the company and the government was released under Freedom of Information laws.<sup>9</sup> In one exchange, a government official asked the PR company to remove sand-dunes from a photo to be used in a brochure. The explanation provided by the government official was that: "Dunes are a sensitive area with respect to Aboriginal Heritage". The sand-dunes were removed from the photo, only for the government official to ask if the horizon could be straightened up as well.

In 2003, the federal government used the Lands Acquisition Act 1989 to seize land for the dump. Native Title rights and interests were extinguished with the stroke of a pen. This took place with no forewarning and no consultation with Aboriginal people.

The Kungkas continued to implore the federal government to 'get their ears out of their pockets', and after six years the government did just that. In the lead-up to the 2004 federal election, with the dump issue biting politically, the Howard government decided to cut its losses and abandon the dump plan.

The Kungkas wrote in an open letter: "People said that you can't win against the Government. Just a few women. We just kept talking and telling them to get their ears out of their pockets and listen. We never said we were going to give up. Government has big money to buy their way out but we never gave up."<sup>10</sup>

The Kungkas victory had broader ramifications – it was a set-back for the nuclear power lobby. Senator Nick Minchin, one of the government ministers in charge of the failed attempt to impose a nuclear dump in SA, said in 2005: "My experience with dealing with just low-level radioactive waste from our research reactor tells me it would be impossible to get any sort of consensus in this country around the management of the high-level waste a nuclear [power] reactor would produce." Minchin told a Liberal Party council meeting that "we must avoid being lumbered as the party that favours nuclear energy in this country" and that "we would be political mugs if we got sucked into this".<sup>11</sup>

### Nuclear War

Muckaty Traditional Owners have won their battle for country and culture, but the problems and patterns of radioactive racism persist. Racism in the uranium mining industry involves ignoring the concerns of Traditional Owners; divide-and-rule tactics; radioactive ransom; 'humberging' Traditional Owners (exerting persistent, unwanted pressure); providing Traditional Owners with false information; and threats, including legal threats.

One example concerns the 1982 South Australian Roxby Downs Indenture Act, which sets the legal framework for the operation of BHP Billiton's Olympic Dam uranium mine in SA. The Act was amended in 2011 but it retains exemptions from the SA Aboriginal Heritage Act. Traditional Owners were not even consulted. The SA government's spokesperson in Parliament said: "BHP were satisfied with the current arrangements and insisted on the continuation of these arrangements, and the government did not consult further than that."

That disgraceful performance illustrates a broader pattern. Aboriginal land rights and heritage protections are feeble at the best of times. But the legal rights and protections are repeatedly stripped away whenever they get in the way of nuclear or mining interests. Thus the Olympic Dam mine is largely exempt from the SA Aboriginal Heritage Act. Sub-section 40(6) of the Commonwealth's Aboriginal Land Rights Act exempts the Ranger uranium mine in the NT from the Act and thus removed the right of veto that Mirarr Traditional Owners would otherwise have enjoyed.<sup>12</sup> Legislation in the state of New South Wales exempts uranium mines from provisions of the NSW Aboriginal Land Rights Act.<sup>13</sup> Native Title rights were extinguished with the stroke of a pen to seize land for a radioactive waste dump in SA, and Aboriginal heritage laws and land rights were repeatedly overridden with the push to dump nuclear waste in the NT.

The Muckaty battle has been won, but the nuclear war against Aboriginal people continues. And it will continue to be resisted, with the Aboriginal-led Australian Nuclear Free Alliance playing a leading role.<sup>14</sup>



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# Dose versus risk in US regulation of radiation exposure

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**NM788.4400** How many Rems / Sieverts of radiation have you been exposed to throughout your life? Few people know. If you know, how does that dose correspond to the great numbers game that is the “probability” that this exposure has resulted in harm? Unless you are sick, you don’t really know the outcome. Even then it will be virtually impossible to prove that your illness is from that radiation exposure unless you fall into very narrow categories of exposure. The point is this: a national radiation standard is used to allow licensed industrial operations to release radioactivity that exposes the public to ionizing radiation in addition to background, not to protect it – unless negligence (releases over “allowed” concentrations) can be shown.

The US Environmental Protection Agency’s (EPA) early notice of an update of the radiation standards that allow the nuclear fuel chain to contaminate air, water and land that is unrestricted, thereby exposing the general population (see Nuclear Monitor #786).

The EPA has posed a series of questions, one of which is whether the basis should be a radiation dose limit (in Rems or Seiverts) as the regulation does today; or whether, instead, the risk of harm should be the regulatory basis. Harm is usually defined by the EPA as cancer incidence. Non-cancer impacts are not considered.

The EPA’s current standard has three dose limits: 25 mRem (0.25 mSv) total body along with the additional limits of 75 mRem (0.75 mSv) to the thyroid gland and 25 mRem (0.25 mSv) to any other organ. The EPA currently uses a 30 year span and a population that is adjusted for age, but not gender. These are, of course, averages.

The plot thickens in the US since the EPA sets the standard, and then hands it to the Nuclear Regulatory Commission (NRC) which then issues regulations for its licensees that supposedly “deliver” this level of exposure (or less). The trick is that neither the EPA nor the NRC ever advertises risks of harm associated with either the standard, or the following regulations.

Here is how it works out, using risk numbers that are buried in the government documents. I, and NIRS do not endorse these risk evaluations as accurate, we are merely reporting them.

A 25 mRem dose each year over 30 years to an age (not gender) adjusted population results in a risk of cancer of 1 in 1,200, according to the EPA. The NRC’s regulations, through some mumbo jumbo looks only at cancer deaths (excluding non-fatal cancers, and non-cancer morbidity and mortality), and allows up to 100 mRem per license per year. This translates – in the NRC’s own published assessment – to a risk of fatal cancer over a 70 year span of 3.5 per 1000 people exposed (or 1 fatal cancer per 286 people exposed).

While some people dismiss this as “low compared to cancer rates today” the potential for harm becomes quite large when the entire population of the US is “allowed” to be exposed to this much radiation. If these numbers are extended across the national population – since such exposure is permitted by the standard – the totals are not trivial. The EPA’s 1 in 1,200 risk for an annual 25 mRem dose (as the standard allows) equates to 250,000 cancers in 300 million people. The NRC’s regulation (assuming an individual dose of 100 mRem per year

source over background) would result in over one million cancer deaths if 300 million people are exposed (which is actually conservative given the fact that the 100 mRem per year applies to each license, not per individual). In general there are two cases of cancer incidence for every cancer death, so more like 2,100,000 total cancers at the NRC rate of “allowable” exposure.

In general my colleagues in the US are wary of using risk as the basis of regulation. It is a challenge for some grassroots people to read scientific notation and there is a fear that risk numbers are easier to manipulate and harder to “prove.”

Nonetheless, a Sievert and Rem also cannot be directly measured once the dose has occurred. It is nearly impossible to prove radiation exposure. In fact, both projected risk and projected radiation dose estimates are rooted in tables that show concentrations of various radionuclides in air, water or solid.

One of the trickier issues is how to preserve the current organ limits. The industry and its regulators are keen to drop organ limits because meeting these lowers the total body dose significantly. Most radionuclides (with the exception of tritium and to some degree cesium) concentrate in a target organ, or on bone surface. This fact makes the preservation of some element of dose important.

Nonetheless, the EPA has a published goal of protecting the general population to the risk level of one cancer incidence per 1,000,000 people affected. When this number is not obtainable, the agency goes as high as 1 cancer incidence per 10,000 exposed. Clearly radiation is a “privileged” pollutant since it is regulated to allow a cancer in only 1,200 exposed people. It is time to bring radiation limits in line with the EPA’s overall protection commitments.

### “Reference Man”

What would this look like? Well, it really depends on who you want to protect. Historically radiation standards applied to a “Reference Man,” generally a young male of a specified height, weight and assumed to have “White” cultural habits. Today from multiple sources we know that when children are exposed to radiation, they are more likely to get cancer at some point in their lives than if exposed as an adult. We also know that young girls exposed are twice as likely to suffer that harm as are young boys. Little girls are not a “sub population.” In order for “Standard Men” to exist, there have to be little girls in his lifecycle. It would make sense to choose the most sensitive portion of the lifecycle as a new “reference group.” However, if we choose a juvenile female 0–5 years old as our “reference” individual, we have a problem.

Taking the EPA’s 1 cancer in 10,000 goal and using the current age, but not gender-adjusted group, and taking an average, not a “reference” individual, then the “permitted dose” over the lifetime will have to be below 2 mRem (0.02mSv). If we accept 3 cancers in 10,000 then 5 mRem a year would be “permissible;” a significant reduction from the current 25 mRem per year.

The more stringent method of taking a 0–5 year old juvenile female as the “reference” individual is not possible with an annual additional ionizing radiation dose over background. Any additional dose does not work to meet any of the risk goals. It will take a negative additional dose. Not possible?

A negative additional annual dose *is* possible: When the facilities are all closed and people are cleaning them up and concentrating and containing radioactivity that has already been released, this will lower doses. If it continues, there will be a negative “additional” dose. That will be when we are actually protecting our future generations. Until then, we should never use the word “protection” when it comes to exposing people to radioactivity that they never agreed to.

## Reform of the Japan Atomic Energy Commission: as if Fukushima never happened

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**NM788.4401** During the 2012 energy policy review process carried out by the previous government (Democratic Party of Japan (DPJ)), it was revealed that for over a decade the Japan Atomic Energy Commission (JAEC) had held secret meetings in parallel with public policy meetings.<sup>1</sup> Nuclear critics were not invited to these secret meetings. This situation was exposed after a series of scoops by *Mainichi Shimbun* in 2012, which described in ever more graphic detail the contents of secret meetings conducted in parallel with the 2012 review process.

The upshot of the secret meetings scandal was that the DPJ Government promised in its September 2012 *Innovative Strategy on Energy and the Environment* that a review of the Commission would be conducted ‘with its abolition and reorganization in mind’.<sup>2</sup> The government duly established a review committee, which published a report on 18 December 2012, two days after the national election which the DPJ Government lost.<sup>3</sup> After taking office the new government (Liberal Democratic Party - New Komei Party coalition) shelved the report and commenced a new review. The new committee’s report was released on 10 December 2013.<sup>4</sup>

The report recommended that JAEC continue to exist, but in a trimmed down form, with the number of commissioners reduced from five to three. Its most prominent recommendation was that JAEC no longer produce an overarching Framework for Nuclear Energy Policy. This was thought to be adequately covered by the Basic Energy Plan and the Science and Technology Basic Plan. The report recommended that JAEC continue to provide perspectives on radioactive waste treatment and disposal, and on 'peaceful use' and nuclear non-proliferation, but that it no longer have the role of promoting nuclear power. It indicated that legislative amendments could be required, but did not specify what those amendments might be.

If JAEC is to be transformed into a neutral organisation which does not set the overall direction of nuclear energy policy, it would be desirable for amendments to be made to the Atomic Energy Basic Act, in particular to Article 1, which states that the purpose of the Act is 'to encourage the research, development and utilization of nuclear energy', and Article 5(1), which states that the Atomic Energy Commission 'shall plan, deliberate on and determine the matters related to the research, development and utilization of nuclear energy,' but the Atomic Energy Basic Act has not been amended. An amendment to the Atomic Energy Commission Establishment Act passed on 20 June 2014 reduced the number of commissioners to three, but did not address the issue of JAEC neutrality.

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The *Mainichi Shimbun* reported that a Liberal Democratic Party committee had decided that JAEC would be tasked with putting together a nuclear energy policy that would effectively have equivalent status to the 2005 Framework for Nuclear Energy Policy.<sup>5</sup> It seems, then, that while JAEC has been weakened, it has averted fundamental reform.

A bizarre proposal was recently made by the Radioactive Waste Working Group suggesting that one role for the reformed JAEC could be as an independent third party body to review the high-level radioactive waste disposal business.<sup>6</sup> Even if the Radioactive Waste Working Group sees the new JAEC as independent, it is very unlikely that residents of potential high-level waste disposal sites will. Perhaps this proposal says more than anything about the insensitivity of the current government and the nuclear administration to the feelings of the citizens.

It is as if Fukushima never happened.

## 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.

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