# NUCLEAR MONITOR

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A PUBLICATION OF WORLD INFORMATION SERVICE ON ENERGY (WISE)
AND THE NUCLEAR INFORMATION &RESOURCE SERVICE (NIRS)


Dear readers of the WISE/NIRS Nuclear Monitor,

In this issue of the Monitor:

- We deconstruct false claims that environmentalists are turning in support of nuclear power.
- Francisco Castejón from Ecologistas en Acción writes about the campaign to close the Almaraz nuclear power plant in Spain.
- We look at the World Nuclear Association's pitiful attempt to match the authoritative World Nuclear Industry Status Report.
- Clément Sénéchal from Greenpeace France writes about quality control and safety concerns in France, with implications for at least another dozen countries.

The Nuclear News section has reports on a book written by Hasegawa Kenichi, a dairy farmer from Iitate Village in Fukushima; as-yet unsuccessful attempts to find an operator for the troubled Monju fast reactor in Japan; the litany of broken promises with the UK nuclear power program; a 7-day walk in Western Australia led by Aboriginal Traditional Owners protesting uranium mining; and the ongoing protest camp recently established at the Bure nuclear waste dump site in France.

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

## Monitored this issue:



# Clean energy revolution in Philadelphia!

Two years ago, 400,000 people joined the historic People's Climate March in New York City – including thousands who marched with the Nuclear-Free, Carbon-Free Contingent organised by a coalition including the Nuclear Information & Resource Service (NIRS).

Join in on July 24 as we march for a Clean Energy Revolution in Philadelphia. The Democratic National Convention will be meeting there starting the next day. The Nuclear-Free, Carbon-Free Contingent will be marching with thousands of anti-fracking, climate justice, First Nations, fair trade, unions, and clean energy activists, demanding an end to dirty energy and a total commitment and a just transition to clean, sustainable, renewable energy.

The Nuclear-Free, Carbon-Free Contingent facebook page has updates on the march and where to find us in Philadelphia. For those able to make a weekend of it in Philadelphia, there is even more happening on Saturday, July 23:

- The Summit for a Clean Energy Revolution: workshops and speeches from national leaders, grassroots heroes, and frontline organizers on how to build the movement.
- PowerShift 2016: the conference for young climate activists to learn, network, share skills, and build the next generation of leadership.
- Nuclear-Free, Carbon-Free meeting: meet with anti-nuclear and -uranium activists as we make plans for 2017 and beyond (contact Tim Judson for more info, timj@nirs.org).

If you can't make it and/or would like to help more people attend, please make a donation to support the Nuclear-Free, Carbon-Free contingent. Funds raised will also help First Nations and anti-uranium activists make the trip to Philadelphia.

More information:

www.tinyurl.com/24july2016
www.cleanenergymarch.org
www.facebook.com/groups/nukefreeclimatefreemarch

# Manufacturing dissent: environmentalists and nuclear power

**Author:** *Jim Green – Nuclear Monitor editor*

**NM826.4566** Rupert Murdoch's Wall Street Journal (WSJ) published a disingenuous piece of agitprop on June 16, claiming that: "Some of the nation's most influential environmental groups are softening their longstanding opposition to nuclear power, marking a significant shift in the antinuclear movement as environmentalists' priority shifts to climate change."[1]

According to the *WSJ:*

*"The Sierra Club, the country's oldest and largest environmental group, is debating whether to halt its longtime position in support of shuttering all existing nuclear-power plants earlier than required by their federal operating licenses. The environmental group's leaders see existing reactors as a bridge to renewable electricity and an alternative source of energy as the group campaigns to shut down coal and natural gas plants.*

*"The Environmental Defense Fund is similarly deciding to what extent it should adjust its policy, potentially lending its support to keeping open financially struggling reactors.*

*"In Illinois, the Natural Resources Defense Council, along with the Sierra Club and EDF, are among the advocacy groups working with Exelon and state lawmakers on a legislative deal that would reverse a decision the company made in early June to close two nuclear reactors in the next two years."*

Michael Brune, Executive Director of the Sierra Club, said in response that the organization "remains in firm opposition to dangerous nuclear power", that the *WSJ* article "reflects wishful thinking on the part of the nuclear industry", that it is "categorically incorrect to suggest that the Sierra Club considers nuclear power a 'bridge' to clean energy" and that nuclear power "is a bridge to nowhere".[2]

Likewise, Henry Henderson from the Natural Resources Defense Council said the *WSJ* was "dead wrong on our goals, focus and motivation" and that the organization's efforts to reform energy policy "do not involve, or signal, a change in NRDC's long-held concerns about the role of nuclear energy in the country's generation mix."[3]

In a detailed dissection of the *WSJ* propaganda, Fairness & Accuracy in Reporting (FAIR) noted that "major assertions in the Journal article turn out to be either factually inaccurate, or to omit or spin important details."[4]

FAIR reports:

*"The characterization of Illinois' energy-policy debate, for example, is "over-the-top outrageous," according to Dave Kraft, director of the Nuclear Energy Information Service, a 35-year-old safe-energy organization that calls itself 'Illinois' Nuclear Power Watchdog.' NEIS is part of a coalition of environmental groups opposing SB 1585, a piece of legislation dubbed the Next Generation Energy Plan that is still in play. The bill was cobbled together from a proposal developed by Exelon with input from a variety of competing interests, including green groups. Kraft says these activists have been negotiating not "SO THAT the plants would be kept in operation, but WHETHER they will. ... That's a significant difference."*

FAIR noted that the *WSJ* story was framed by the story's two quoted pro-nuclear sources, Joe Dominguez from energy company Exelon, and Michael Shellenberger, co-founder of the Breakthrough Institute. The *WSJ* describes the Breakthrough Institute as a "progressive think tank"; FAIR is closer to the mark describing it as a "quasi-neoliberal, pro-technology environmental think tank." Shellenberger now fronts 'Environmental Progress', a group whose sole focus appears to be promoting nuclear power along with implicit and sometimes explicit attacks on renewable energy.

Shellenberger is quoted in the *WSJ* saying that a trickle of environmentalists changing their minds about nuclear has become a "stampede", and in response to the FAIR article he claimed[5] that environment groups are having an "internal civil war" over their position on nuclear power. Both claims are presented without a shred of evidence. Both reflect a postmodernist approach to truth-telling: tell a lie, tell it often, and hope it comes true.

Moreover, Shellenberger doesn't believe his own rhetoric about environment groups turning in support of nuclear power. On June 22 he led a bizarre pro-nuclear protest in San Francisco targeting the Sierra Club, Greenpeace and the NRDC for their anti-nuclear policies.[6] Also leading the protest march were 'Mothers for Nuclear' – started by two women who work in the nuclear power industry.[4]

The dishonesty of the corporate media and the antics of pro-nuclear lobbyists are having precious little effect. Despite Shellenberger's dedicated lobbying, Exelon announced in June that it plans to permanently shut down three reactors in Illinois: Clinton in 2017, and Quad Cities 1 and 2 in 2018. Exelon is also threatening to close two others in New York – Ginna and Nine Mile Point 1 – and the Three Mile Island 1 reactor in Pennsylvania is rumored to be at risk of closure, without subsidies like those that are being proposed in the other states. Also in June, Pacific Gas & Electric announced that the two Diablo Canyon reactors will close in 2024 and 2025, leaving California nuclear free – the pro-nuclear protest targeting environment groups was too little, too late.

And those are just the most recent announcements. In addition: Dominion's Kewaunee plant in Wisconsin and Entergy's Vermont Yankee have been shut down in recent years; Southern California Edison shut down the last two operating reactors at San Onofre in California in 2013;


Duke Energy announced in 2013 that the Crystal River plant would never restart following a botched upgrade; Entergy's FitzPatrick plant in New York will be closed in 2017, and Entergy's Pilgrim plant in Massachusetts will be closed in 2019; Exelon's Oyster Creek plant in New Jersey will be shut down by December 2019; and Omaha Public Power District will shut down the Fort Calhoun plant in Nebraska at the end of 2016.

## A long history

FAIR opined: "Instead of a story about a growing fervor for nuclear power among some environmentalists, the story is really one about a growing fervor to resurrect nuclear power among corporate and political elites, aided by a handful of mainly environmentalists-for-hire."[7]

But actually the above quote from FAIR wasn't in response to the recent *WSJ* article. It was written in 2007 in response to an earlier media beat-up about environmentalists swinging in support of nuclear power.

The recent *WSJ* propaganda was just the latest in a long line. In 2014, for example, the BBC falsely claimed that Friends of the Earth UK was turning in support of nuclear power.[8] In 2009−10 the World Nuclear Association heavily promoted a dishonest article claiming that Greenpeace UK had changed its stance on nuclear power.[9]

David Roberts summed up the situation in 2013, when the Pandora's Promise propaganda film was trotting out the familiar lines that former nuclear critics and environmentalists are turning in support of nuclear power:[10]

*"There is no budding environmentalist movement for nukes. Ever since I started paying attention to "nuclear renaissance" stories about a decade ago, there's always been this credulous, excitable bit about how enviros are starting to come around. The roster of enviros in this purportedly burgeoning movement: Stewart Brand, the Breakthrough Boys, and "Greenpeace cofounder Patrick Moore," who has been a paid shill for industry for decades (it sounds like the Pandora folks were wise enough to leave him out). More recently George Monbiot and Mark Lynas have been added to the list. This handful of converts is always cited with the implication that it's the leading edge of a vast shift, and yet ... it's always the same handful.*

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

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

Most likely there are people ambivalent towards or supportive of nuclear power within some environment groups, particularly larger groups with dozens of staff and thousands of members. Big deal. Far from a stampede of pro-nuclear environmentalism, late last year James Hansen was complaining that the Climate Action Network, representing all the major environmental groups, opposes nuclear power.[11] Hansen singled out the NRDC, Environmental Defense Fund and World Wide Fund for Nature for their anti-nuclear policies.[12]

**References:**

1. Amy Harder, 16 June 2016, 'Environmental Groups Change Tune on Nuclear Power', www.wsj.com/articles/environmental-groups-change-tune-on-nuclear-power-1466100644
2. 23 June 2016, 'The Sierra Club Still Opposes Nuclear Power', www.wsj.com/articles/the-sierra-club-still-opposes-nuclear-power-1466717284
3. Henry Henderson, 20 June 2016, 'Illinois Energy and a Note on Nukes', www.nrdc.org/experts/henry-henderson/illinois-energy-and-note-nukes
4. Miranda C. Spencer, 24 June 2016, 'WSJ Fakes a Green Shift Toward Nuclear Power', http://fair.org/home/wsj-fakes-a-green-shift-toward-nuclear-power/
5. http://fair.org/home/wsj-fakes-a-green-shift-toward-nuclear-power/#comment-3095267
6. Rod Adams, 26 June 2016, 'Hopeful days for environmental progress in California', http://atomicinsights.com/hopeful-days-environmental-progress-california/
7. FAIR, 22 Aug 2007, 'NPR Touts Pro-Nuke 'Environmentalists': Network's own nuclear links undisclosed', http://fair.org/take-action/action-alerts/npr-touts-pro-nuke-environmentalists/
8. 18 Sept 2014, 'Friends of the Earth UK's position on nuclear power', Nuclear Monitor #791, www.wiseinternational.org/nuclear-monitor/791/friends-earth-uks-position-nuclear-power
9. www.world-nuclear-news.org/NP_Greenpeace_change_the_politics_1310091.html
10. David Roberts, 14 June 2013, 'Some thoughts on "Pandora's Promise" and the nuclear debate', http://grist.org/climate-energy/some-thoughts-on-pandoras-promise-and-the-nuclear-debate/
11. http://hosted.verticalresponse.com/372493/c25ebfa5d2/1603503199/be41125912/
12. www.theenergycollective.com/jarretadams1/2293694/no-climate-solution-without-nuclear-experts-say

# Spain: Successful demonstration in Cáceres for the closure of Almaraz nuclear power plant

**Author:** *Francisco Castejón – Ecologistas en Acción*

**NM826.4567** On June 11, more than 1,500 people, summoned by more than 45 organizations, participated in a demonstration for the closure of the Almaraz nuclear power plant in the town of Cáceres, in the south-west of Spain, close to Portugal. The participant groups were from both Portugal and Spain and included social, environmental and political organizations.

The call came from the recently created *Movimiento Ibérico Antinuclear* (Iberian Antinuclear Movement), aiming to join the efforts of Spanish and Portuguese activists in order to stop the Spanish nuclear power plants, which can affect the two countries, and to stop uranium mining projects close to the common border.

The demonstration was festive and colorful and included dancing, music, theatre, flash mobs, and other activities. The day culminated in a protest march.

The goal of the demonstration was to call for the closure of Almaraz when its present operating licence ends in 2020. We also called for the definitive closure of Garoña nuclear plant, which has been shut down since December 2012 and is the oldest of the Spanish nuclear plants, and for the closure of all the Spanish nuclear power plants when their current operating licences end. This means that the last plant would close in 2024.

Almaraz is composed of two PWR reactors with a total capacity of about 2,100 MW, with cooling water from the Arrocampo dam, in the Tajo river. The first reactor started in 1981 and the second in 1983, so they are 35 and 33 years old. Almaraz reactors have a long story of incidents, including two leakages of radioactive water and the corrosion of their six steam generators, which had to be changed in the 1990s. The new steam generators are supposed to be corrosion-proof, but the first symptoms of corrosion have been already detected. Almaraz has had several emissions of excessively hot water that have caused the death of a lot of fish, decreasing the quality of the river water.

The most recent and serious incident is related to the pumps of the essential services water (ESW). The ESW system is a basic element for the safe operation of the nuclear power plant. Among other important functions, the system guarantees that the reactor cooling works properly, since the primary circuit pumps are cooled by the ESW.

The plant has four identical ESW pumps that take water from the Arrocampo dam, plus a spare one. A common problem was detected in the five pumps: a piece that avoids the oil scape can break causing the pumps stop working. Two pumps failed in September 2015 and January 2016. Instead of stopping the plant, the operators decided to continue with the reactors operating at the highest power level and to repair the

June 11 protest for the closure of the Almaraz nuclear power plant.

ESW pumps one by one, without stopping. This option was based on the report presented by Areva, after the scandal of the fake safety protocols and was approved by the Spanish regulator, the Consejo de Seguridad Nuclear (CSN, Nuclear Safety Council).

On top of that, the CSN did not force the operator to repair the floodgates of the reactors, which are not able to protect the cores of the two reactors in case of a dam break. The owners of Almaraz want to keep the plant working since it generates revenue of more than €1 million per day in the Spanish electricity market that favors the NPPs.

All these events have worried Portuguese citizens and politicians, since an accident in Almaraz would affect that country: radioactive isotopes can travel by the air and by the Tajo river. The Portuguese Parliament voted unanimously for the closure of Almaraz, as well as the Lisbon City Council.

After Garoña, Almaraz is the oldest one in Spain. In 2020, a decision will be taken on how long the plant should operate. There has been a political debate on how long nuclear plants can operate. The conservative People's Party wants to extend the lifespan to up to 60 years, but the Spanish Socialist Workers' Party wants to restrict the reactors to a 40-year lifespan. The position of the Citizens Party (Ciudadanos) is not clear, but they are not against nuclear power and probably have a similar position to the People's Party.

The Movimiento Ibérico Antinuclear argues against any lifespan extensions. This would result in the closure of Almaraz I and II in 2020 and the closure of the last nuclear plant in Spain in 2024. Unidos Podemos – a left-wing electoral alliance – supports this proposal. The results of the recent Spanish election make it difficult to promptly close the nuclear plants: the People's Party increased its parliamentary representation while the Workers' Party and Unidos Podemos did not do as well.

Nevertheless, we, the Iberian antinuclear activists, will continue trying to convince people and politicians that keeping the nuclear plants operating is a dangerous mistake.

# Not the World Nuclear Industry Status Report

**Author:** *Jim Green – Nuclear Monitor editor*

**NM826.4568** The nuclear industry loathes the annual World Nuclear Industry Status Reports (WNISR). The authoritative WNISRs[1] provide detailed factual information on the status of nuclear power worldwide. As such, they undermine the industry's claims that nuclear power is going well and will only get better.

The industry's irritation is exacerbated by the commentary of former World Nuclear Association executive Steve Kidd, who regularly debunks industry propaganda. Last year, for example, Kidd wrote:

*"We have learned one thing for certain: it's a lot easier to shut a reactor down than to build a new one. There are alternatives to nuclear for power generation and the competition is getting continuously stiffer. Hence well-researched and articulate critiques against the concept of any nuclear growth ... such as the annual World Nuclear Industry Status Report, are becoming increasingly difficult to ignore. The combination of aging operating reactors, delayed construction plans combined with escalating costs of new units and competition from renewable power technologies is becoming a compelling story to any lay reader."*

In response to the growing recognition and authority of the annual WNISRs, the World Nuclear Association (WNA) has decided to strike back with the release of the World Nuclear Performance Report 2016, the first in what promises to be an annual series.[2]

The nuclear industry generally relies on a few cherry-picked factoids which skate around the simple fact that nuclear power has flatlined over the past decade, along with fanciful projections of future growth. And for the most part, that's just what the WNA report does.

But given that it purports to be a factual analysis of the status of nuclear power, the WNA report has to present some inconvenient facts ... such as the fact that nuclear power now generates "roughly 10% of the world's electricity". As WNISR-2015 notes, nuclear's current share is well down from the peak of 17.6% in 1996.[3]

The nuclear power industry is "growing", the WNA report claims. Which is a round-about way of saying that the industry *isn't* growing. Even including 41 operable-but-not-actually-operating reactors in Japan, there are no more operable reactors now than there were 20 years ago. And the WNA report itself states that nuclear power generation "has shown a slow decline since the turn of the century."

Nuclear reactors generated 2,441 terrawatt-hours (TWh) of electricity in 2015, according to the WNA report. But as WNISR-2015 notes, the near-identical figure of 2,410 TWh in 2014 was 9.4% below the historic peak in 2006.[3]

The WNA notes that nuclear accounts for "around one-third of the world's low-carbon electricity supply". Which is a round-about way of acknowledging that renewables generate more than twice as much electricity as nuclear. The WNA report is silent about the spectacular growth of renewables over the past decade.

While the WNA does its best to put a positive spin on nuclear power's precarious situation, there's also some realpolitik such as this:

*"[T]he situation facing the nuclear industry globally is challenging. Established fleets in several European countries face public acceptance issues and a negative policy environment; there are tough economic conditions for operators not only in some deregulated energy markets such as in parts of the USA, but also in European countries where electricity prices have been depressed by a growing share of renewable technologies subsidised to produce regardless of whether their electricity is needed or not."*

The WNA report claims that nuclear power in Europe "is appearing more attractive in the face of the EU's measures to reduce carbon emissions and the Energy Union goal to increase collective energy security." Yet every serious analysis of nuclear power in Europe projects decline in the coming decades, most recently the European Union's 'PINC' report.[4]

The WNA itself acknowledges that there are just four reactors currently under construction in western and central Europe and that all of them are behind schedule.

The WNA claims that the future of nuclear power in Japan is "crystallising" with the first reactor restarts last year. But the future of nuclear power in Japan is as clear as mud. Twelve of Japan's power reactors

have been permanently shut down in the aftermath of the Fukushima disaster (including the six Fukushima Daiichi reactors). Of the 43 'operable' reactors, only two are operating. Perhaps one-third will eventually restart, perhaps two-thirds, perhaps less, perhaps more.

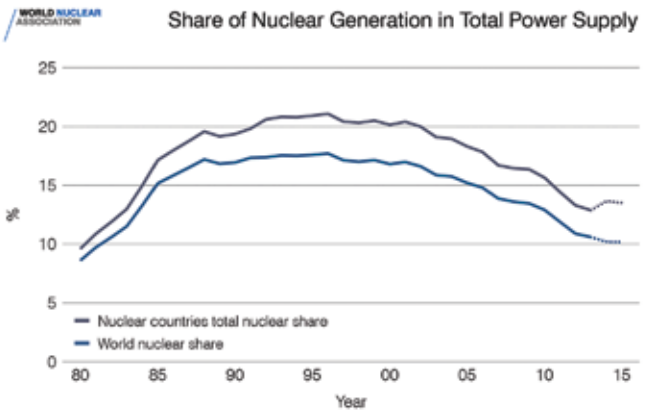
The WNA claims that "substantial progress" has been made towards the commercialization of small and advanced reactor designs. Which is a round-about way of saying that substantial progress has *not* been made towards the commercialisation of small and advanced reactor designs. Reports released last year by the French and U.S. governments give the lie to the WNA's claims.

The report by the French Institute for Radiological Protection and Nuclear Safety states: "There is still much R&D to be done to develop the Generation IV nuclear reactors, as well as for the fuel cycle and the associated waste management which depends on the system chosen."[5] The US Government Accountability Office report on the status of small modular reactors (SMRs) and other 'advanced' reactor concepts in the US concluded:[6]

*"Both light water SMRs and advanced reactors face additional challenges related to the time, cost, and uncertainty associated with developing, certifying or licensing, and deploying new reactor technology, with advanced reactor designs generally facing greater challenges than light water SMR designs. It is a multi-decade process, with costs up to $1 billion to $2 billion, to design and certify or license the reactor design, and there is an additional construction cost of several billion dollars more per power plant."*

More reactors came online last year than at any time in the past 25 years, the WNA report states. Yes, 10 reactors came online last year, but there were also eight shut-downs. As Steve Kidd wrote in January 2016: "The future is likely to repeat the experience of 2015 when 10 new reactors came into operation worldwide but 8 shut down. So as things stand, the industry is essentially running to stand still."[7]

The WNA report states: "Construction times for new reactors have improved over the last 15 years, with reactors coming on line in 2015 having an average construction time of around six years." But a large majority of those reactors came online in China. WNISR-2015 noted that the average construction time of the latest 40 reactors (in nine countries) that started up since 2005 was 9.4 years.[3]




Nuclear power's declining share of global electricity generation.
Source: World Nuclear Performance Report 2016.

The WNA report states that more reactors are under construction than at any time in the last 25 years. But as WNISR-2015 noted, at least three-quarters of all reactors under construction worldwide are delayed; and 16 of 18 Generation III+ reactors (AP1000, Rosatom AES-2006, EPR) are delayed.[3]

And the WNA report has little to say about the aging of the global reactor fleet and reactor closures. The International Energy Agency expects a "wave of retirements" – almost 200 closures by 2040.[8]

The WNA report claims that 158 reactors are in the planning stage – approval has been granted and/or funding has been committed by a developer. However a good number of those reactors will never the light of day. For example the WNA lists[9] 18 planned reactors in the USA, 9 in Japan, 25 in Russia, and 24 in India. But nuclear power is in retreat in the USA and Japan, and growth has been very slow in Russia and India.

The WNA report claims that "older plants operate as well as younger plants." But the aging of nuclear plants is creating all sorts of problems. The industry faces an escalating battle to keep aging reactors running as about a quarter of components and computer systems become obsolete, according to nuclear plant owners. A recent survey of people employed in the industry found 86% thought the age of the plants was having a moderate or significant effect on efficiency.[10]

Funding safety upgrades for old reactors is another problem. In France, for example, it's anyone's guess how the nuclear utilities will fund new reactors as well as the €100 billion required by 2030 to upgrade the existing fleet.[11]

References:

1. http://worldnuclearreport.org
2. World Nuclear Association, June 2016, 'World Nuclear Performance Report 2016', http://world-nuclear.org/our-association/publications/online-reports/world-nuclear-performance-report-2016.aspx
3. Mycle Schneider, Antony Froggatt et al., July 2015, 'World Nuclear Industry Status Report 2015', www.worldnuclearreport.org/-2015-.html
4. 21 April 2016, 'The steady decline of nuclear power in Europe', Nuclear Monitor #822, www.wiseinternational.org/nuclear-monitor/822/steady-decline-nuclear-power-europe
5. IRSN, 2015, 'Review of Generation IV Nuclear Energy Systems', www.irsn.fr/EN/newsroom/News/Pages/20150427_Generation-IV-nuclear-energy-systems-safety-potential-overview.aspx
   Direct download: www.irsn.fr/EN/newsroom/News/Documents/IRSN_Report-GenIV_04-2015.pdf
6. U.S. Government Accountability Office, July 2015, 'Nuclear Reactors: Status and challenges in development and deployment of new commercial concepts', GAO-15-652, www.gao.gov/assets/680/671686.pdf
7. Steve Kidd, 8 Jan 2016, 'After COP-21 - where does nuclear stand?', www.neimagazine.com/opinion/opinionafter-cop-21---where-does-nuclear-stand-4770510/
8. International Energy Agency, 2014, www.iea.org/media/news/2014/press/141112_WEO_FactSheet_Nuclear.pdf
9. http://world-nuclear.org/information-library/facts-and-figures/world-nuclear-power-reactors-and-uranium-requireme.aspx
10. Paul Brown, 6 June 2016, 'Nuclear plants face crisis of ageing', http://climatenewsnetwork.net/nuclear-plants-in-crisis-over-ageing-parts/
11. World Nuclear News, 11 Feb 2016, 'EDF faces €100 billion reactor upgrade bill, says audit office', www.world-nuclear-news.org/RS-EDF-faces-EUR100-billion-reactor-upgrade-bill-says-audit-office-1102164.html

# Anomalies and suspected falsifications in the nuclear industry: a dozen countries affected

**Author:** *Clément Sénéchal – Greenpeace France*

**NM826.4569** On May 3, the French Nuclear Safety Authority (ASN) announced that Areva had informed it of "irregularities in components produced at its Creusot Forge plant." The problems concern documents attesting to the quality of several parts manufactured at the site. The ASN specifies "inconsistencies", pointing to shortcomings in quality control (as a best-case scenario) but also mentions "omissions or modifications" related to the potential falsification of manufacturing reports.

At least 400 of the 10,000 quality documents reviewed by Areva contained anomalies. Problems concern the concentration levels of carbon and other elements contained in metallic parts, which determine the resistance of machined components. These levels were incorrectly reported or not reported at all. The possible explanation is that figures which did not comply with regulatory safety requirements were masked using this process. However, this equipment must be extremely robust and operate to the highest mechanical standard to ensure total safety.

Questions over quality control were first raised after irregularities were found in late 2014 in the EPR vessel in Flamanville following an ASN request. Finding Areva's audit of parts manufactured since 2010 too limited and superficial, the ASN requested a more detailed assessment going back to 2004, when the first EPR parts were made. Areva, which has owned the Creusot site since 2006, decided to review reports on all parts made since the plant began operating in 1965.

### Trust in quality control: broken

Fraud at this level, if it is proven, deeply challenges this entire system and our trust in how safe it is. It is therefore all the more shocking to hear the French minister in charge of nuclear safety downplay the initial findings the same way EDF and Areva have.

For example, on May 4, France's environment minister Ségolène Royal affirmed on RTL radio: "I reviewed the matter this morning before coming here and can safely say that initial results are good: the parts are compatible – it is the documents which are defective".

EDF, in turn, stated that "safety was not compromised", but did not produce any new evidence. Its analysis seems to be based on additional data provided by Areva. In view of the concerns regarding the technical quality and the sincerity of Areva's documents, this move can by no means be regarded as sufficient.

These declarations seem premature, to say the least. When errors are mistakenly or intentionally included in manufacturing documents, the true quality of the components cannot be known with certainty without verification or new tests. Like those under way for the upper and lower heads of the EPR vessel, these tests will be long and complex. It is currently impossible to predict acceptable results. The ASN itself has said that "the proof provided so far is insufficient to arrive at that conclusion."

### At least a dozen countries potentially affected

In over 200 reports on the most safety-sensitive equipment in nuclear reactors, around 60 parts are thought to be currently in service in 19 operating reactors at nuclear plants across France. All of EDF's reactors, as well as other large components in other nuclear facilities, may be affected by parts produced at Creusot Forge.

In Europe, potential problems were confirmed in at least three countries:

- United Kingdom: ONR, Britain's regulator confirmed in a communiqué dated May 13 that the Sizewell B reactor is equipped with potentially affected parts from the Creusot site and stated it was waiting until May 31 for detailed information from Areva confirming whether the parts were in fact affected. The reactor vessel, and the replacement vessel closure lid, may be affected.
- Sweden: Similarly, Vattenfal, which operates the country's Ringhals station, said on May 18 that two components used in the Ringhals 4 reactor may be affected. Steam generators in reactors 3 and 4 have been replaced with Creusot-made parts.
- Switzerland: Vessels in the Beznau 1 and 2 reactors as well as replacement steam generators were supplied by Creusot. While there has been no official confirmation, Swiss media covered an ASN report suggesting that parts from Creusot may need more extensive testing.

Stations operating in other European countries which may also be affected include:

- Belgium: Tihange and Doel use replacement steam generators, vessel closure lid and pressuriser supplied by Creusot.
- Spain: Replacement steam generators used at Asco and Almaraz.
- Slovenia: Replacement steam generators used at Krsko.

Elsewhere, potentially affected parts are used in operational reactors on three continents:

- United States: Various reactors use potentially affected vessel components (Prairie Island 1 and 2), replacement lids (North Anna, Surry, Three Mile Island, Crystal River 3, Arkansas, Turkey Point, Salem, Saint

Lucie, D.C. Cook), steam generators (Prairie Island 1, Callaway, Arkansas, Salem, Saint Lucie, Three Mile Island) and pressurisers (Saint Lucie, Milestone).

- Brazil: Angra II uses replacement steam generators.
- China: Equipment in the Guangdong 1 and 2, Ling Ao 1 and 2 and Ling Ao 3 and 4 reactors, as well as replacement reactor lids at the Qinshan station.
- South Korea: Parts in the Ulchin 1 and 2 reactors.
- South Africa: Parts in the Koeberg 1 and 2 reactors.

### We need transparency now

To ensure complete transparency, Greenpeace France asks that this list of parts, along with detailed information about incriminated documents and the nature of the irregularities, omissions or modifications noted for each part, be made public. The little information available is not enough to measure the extent and gravity of the matter. The ASN have asked Areva to provide it with a list of the parts concerned. Greenpeace France believes more should be done.

In addition to the audit, systematic re-assessments of parts are needed When an error or forgery in a document renders compliance uncertain, only a technical review of the concerned parts can clear up any doubt. Greenpeace asks that once the list of concerned facilities is published, their operations be halted immediately so that an initial inspection can identify necessary tests and additional proof to be provided in order to clear up any doubt regarding the quality of all incriminated parts.

### Reactors under construction: the uncertainty of EPR

The Flamanville EPR is the first among those affected by non-compliance problems. The first "serious anomalies" identified by the ASN in spring 2015 were found on the upper and lower heads of the vessel. Excess carbon in the central portion raises questions about their mechanical ability to withstand a sudden breakdown in certain conditions (notably, the need, in certain cases, to inject large amounts of cold water into the vessel, which can create a risk of thermal shock).

This means that the Taishan EPR under construction in China could also be affected by these discoveries, as is the Hinkley Point project in the UK (in the planning stages).

Above all, it demonstrates Areva's inability to control and monitor processes in the nuclear industry and, as a result, confirms an urgent need to plan for a reduction in the share of nuclear energy in the multi-year energy plan which should be published following the energy transition law adopted by France last year.

*Reprinted from www.greenpeace.org/international/en/news/Blogs/nuclear-reaction/anomalies-and-suspected-falsifications-Areva-nuclear-energy/blog/56778/*

# NUCLEAR NEWS

### Fukushima's Stolen Lives: A Dairy Farmer's Story

An English translation of a book by Mr Hasegawa Kenichi, a dairy farmer from Iitate Village in Fukushima, has recently been published and is available on Kindle and iBooks. Hasegawa-san is a strong community leader who has been an important voice for the rights of local citizens, and a regular speaker on Peace Boat voyages, at conferences and field visits including during the Global Conference for a Nuclear-Free World, and in other speaking tours overseas including to Australia and the EU Parliament in Brussels.

Hasegawa-san describes in the book how most of the people in the Japanese village of Iitate – including very young children – continued to live in their homes for more than two months following the Fukushima disaster in March 2011.

Hasegawa describes the catastrophe and its consequences in simple, direct, and clear prose. Weaving together stories about the experiences of Iitate's residents, Hasegawa is a witness to the truth of what life was like immediately following the accident – as he suffered with the knowledge that his children and grandchildren had been exposed to radiation, as he lost all of his cattle, and as he endured the suicide of a fellow dairy farmer and friend.

This is the story of Iitate, but it is also the story of Hasegawa-san, a man who had a lot to lose: a beautiful village steeped in natural history and time-honored traditions, a working dairy farm, a lovely home shared with his extended family, a close-knit community, and colleagues whom he considered close friends. Ultimately, the accident at Fukushima Daiichi – in concert with the profit-minded "nuclear power village" and failures of leadership at every level of government – not only took, but contaminated, all of it: the farm, the fields, the milk, the water, the harvest, the home, and a cherished way of life.

Through it all, Hasegawa pursued the truth by meeting with journalists and taking his own radiation readings. He made sure that the residents in his hamlet of Maeta got what they needed – whether it was bottled water, or reliable information. He confronted lies and hypocrisy in the leadership where he found it. Ultimately, he took a leading role in preserving the interests of everyone and everything he cared about.

Since the evacuation, Hasegawa has organized people from all over Fukushima, including nearly half the population of Iitate, with the goal of getting justice from TEPCO.

Hasegawa-san's ebook is available for US$8 from www.amazon.com/dp/B01GYBERT8

## Wanted: someone, anyone to operate Japan's Monju fast reactor

Japan's Nuclear Regulatory Authority (NRA) demanded in November 2015 that a new operator should be found to operate the Monju fast-breeder reactor. The new operator would replace the Japan Atomic Energy Agency (JAEA), a quasi-government organization which was not competent to operate the reactor according to the NRA. Hiroshi Hase, chair of the NRA, said: "We haven't seen acceptable improvements. We cannot fully trust the current organization."

But six months have gone by and a new operator is nowhere in sight. "We are exploring many different options for who will operate the reactor – either a new entity or an existing company," said a government official recently.

Makoto Yagi, chair of the Federation of Electric Power Companies of Japan, said Monju's design is quite different from normal power reactors and utilities don't have the requisite expertise.

Last November, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) warned that if a replacement operator for Monju cannot be found, the future of the reactor should be fundamentally reviewed, including the possibility of decommissioning it.

Monju has operated for only 250 days in its 20-year history. The World Nuclear Association provides this warts-and-all summary of Monju's history:

*"A key part of Japan's nuclear energy program, Monju initially started in August 1995, but was shut down only four months later after a serious incident. About 700 kilograms of liquid sodium leaked from the secondary cooling loop and, although there were no injuries and no radioactivity escaped plant buildings, this was compounded by operator attempts to cover up the scale of the damage."*

*"Monju was allowed to restart in May 2010 after JAEA carried out a thorough review of the design of the plant, as well as safety procedures, which were shown to have been inadequate. However, the reactor's operation was again suspended in August 2010 after a fuel handling machine was accidentally dropped in the reactor during a refuelling outage. The device was eventually retrieved almost one year later.*

*"In November 2012, it was revealed that JAEA had failed to conduct regular inspections on almost 10,000 out of a total 39,000 pieces of equipment at Monju. Some of these included safety-critical equipment. In January 2013, the NRA ordered JAEA to change its maintenance rules and inspection plans. However, following a review of JAEA's performance since then, the NRA found that the agency has failed to formulate and adhere to a strict inspection schedule."*

Likewise, Nuclear Engineering International made no attempt to put a positive spin on Monju's track record in an October 2015 article:

*"In 2013, NRA ordered JAEA to ban test-runs after more than 10,000 maintenance errors had been found, many involving the facility's piping system. Further safety oversights were subsequently discovered, and in late August some 3000 of errors were found in the safety classifications of the equipment and devices at the reactor during NRA's regular inspection which is conducted our times a year. Some of the errors dated back to 2007, suggesting that previous government inspectors had also overlooked the operator's mistakes. ... NRA officials told a meeting on 30 September that they were unable to grasp the exact nature of the problems, because of JAEA's poor handling of the data."*

In addition to lax safety standards, security has been lax at Monju. Reports in 2013 and 2014 said that fencing was inadequate, regular checks to ensure the security of equipment were not conducted appropriately, rules were violated regarding visitors inside areas containing nuclear material, and that the JAEA said that computer hackers may have stolen private data including internal e-mails and training records.

Japan continues to expand its stockpile of 48 tonnes of separated plutonium (10.8 tonnes in Japan, 20.7 tonnes in the UK and 16.3 tonnes in France) and it continues to advance plans to start up the Rokkasho reprocessing plant in 2018. Rokkasho would result in an additional eight tonnes of separated plutonium annually.

If Japan abandons Monju – and with it the broader aspiration of developing fast reactors – the only remaining civil use for the plutonium would be the limited use of MOX in light-water reactors.

In response to the latest episode of the Monju saga, Allison MacFarlane, a former chair of the U.S. Nuclear Regulatory Commission, offered this sarcastic comment on fast reactor technology: "Many countries have tried over and over. What is truly impressive is that these many governments continue to fund a demonstrably failed technology."

*www.bloomberg.com/news/articles/2016-05-31/nuclear-holy-grail-slips-away-from-japan-with-operator-elusive*

*www.world-nuclear-news.org/RS-New-operator-sought-for-Japans-Monju-reactor-0106165.html*

*http://www3.nhk.or.jp/nhkworld/english/news/nuclearwatch/20151208.html*

*www.neimagazine.com/news/newsjapan-regulator-criticises-monju-operator-4683425*
*www.japantimes.co.jp/news/2013/11/06/national/nuclear-watchdog-warns-monju-reactor-operator-jaea-over-lax-security/*

*http://enformable.com/2014/01/computer-control-room-monju-fast-breeder-reactor-infected-virus/*

## UK nuclear power program: a litany of broken promises

Prof. Stephen Thomas from the University of Greenwich analyses the ongoing controversy over the planned Hinkley Point C nuclear power project in the UK in an article published in *Energy Policy.*

Thomas summarizes:

*"In 2006, the British government launched a policy to build nuclear power reactors based on a claim that the*

*power produced would be competitive with fossil fuel and would require no public subsidy. A decade later, it is not clear how many, if any, orders will be placed and the claims on costs and subsidies have proved false. Despite this failure to deliver, the policy is still being pursued with undiminished determination. The finance model that is now proposed is seen as a model other European countries can follow so the success or otherwise of the British nuclear programme will have implications outside the UK.*

*"This paper that the checks and balances that should weed out misguided policies, have failed. It argues that the most serious failure is with the civil service and its inability to provide politicians with high quality advice – truth to power. It concludes that the failure is likely to be due to the unwillingness of politicians to listen to opinions that conflict with their beliefs. Other weaknesses include the lack of energy expertise in the media, the unwillingness of the public to engage in the policy process and the impotence of Parliamentary Committees."*

Thomas provides the following table comparing earlier promises regarding the British nuclear power program (and Hinkley in particular) and actual agreements:

| What was promised | What was agreed |
|---|---|
| No subsidies: would compete in the market on equal terms with all other sources. | Contract for 35 years. Government loan guarantees perhaps covering all the borrowing, about £17bn, of the expected (including finance) cost. |
| No 'sweetheart deal' | No competitive procurement process |
| Competitive with other forms of generation generating at £31–44/MW h. | Most expensive power on system, £92.5/MWh: more than double 2013 wholesale electricity cost. |
| Construction cost excl. finance £2bn per reactor. | Construction cost, excl. finance £8bn per reactor. |
| First power 2017. | First power 2026. |
| Consortium 80% EDF, 20% Centrica | Consortium 66.5% EDF, 33.5% Chinese companies |
| Programme of 12 reactors by 2030 | No more than a handful of reactors built by 2030 |
| Competition between developers & technologies. | Bilateral negotiations with NNB GenCo + EPR |

*Stephen Thomas, 2016, 'The Hinkley Point decision: An analysis of the policy process', Energy Policy, Volume 96, pp.421–431, www.sciencedirect.com/science/article/pii/S0301421516303044*

## Karlamalyi Walk in Western Australia

Martu Traditional Owners recently led a 140 km, week-long walk to protest against Cameco's proposed uranium mine at Kintyre in Western Australia. Cameco has received conditional government approval to proceed with the mine, but the project has stalled because of the low uranium price.

Kintyre was excised from Karlamilyi National Park – WA's biggest National Park – in 1994. The area still has National Park values – an intricate desert water network and a number of endangered and vulnerable species including the rock wallaby, mulgara, marsupial mole, bilby and quoll. The area includes permanent water holes, ephemeral rivers and salt lakes.

Over 100 artists, activists and Traditional Owners participated in the Karlamalyi Walk. Along the way, stories were told about the land: where water is sourced, where the animals and the plants are, where traditional burial and hunting grounds are located, and why mining on this land must not go ahead.

Aboriginal Traditional Owners are concerned the project will affect their water supplies as well as 28 threatened species in the Karlamilyi National Park. Nola Taylor said the mine represented a threat to the health of people in her community. "It's too close to where we live, it's going to contaminate our waterways, we've got our biggest river that runs right past our community," she said.

"They (Cameco) told me it would be safe, they said all that but we had a cyclone go through here a couple of years back, and for me I have seen what has happened to the river and the water that is in there. I'm going to walk with the rest of the community to fight and stop the uranium mine that's going to go ahead," Taylor said.

Curtis Taylor, a Martu man and filmmaker, is not convinced the waste can be stored safely. "We had assurances given to us by the company but everyone still has that worry, if there was a flooding event that maybe tailings would go into the river," he said.

Joining the walk was Anohni, the Academy Award-nominated musician from Antony and the Johnsons. She said: "It's a huge landscape – it's a really majestic place. It's really hard to put a finger on it but there's a sense of presence and integrity and patience, dignity and perseverance and intense intuitive wisdom that this particular community of people have. There is almost an unbroken connection to the land – they haven't been radically disrupted. They are very impressive people – it's humbling to be around these women. In many regards, I think the guys who run Cameco are desolate souls, desolate souls with no home, with no connection to land, with no connection to country."

From August 7 until September 7, the Walkatjurra Walkabout will be held in Western Australia to protest against the proposed Yeelirrie uranium mine, also owned by Cameco.

Traditional Owner Kado Muir said: "Walkatjurra Walkabout is a pilgrimage across Wangkatja country in the spirit of our ancestors so together, we as present custodians, can protect our land and our culture for future generations. My people have resisted destructive mining on our land and our sacred sites for generations. For over forty years we have fought to stop uranium mining at Yeelirrie, we

Karlamalyi Walk. Photo: Tobias Titz, www.tobiastitz.de

stopped the removal of sacred stones from Weebo and for the last twenty years we have stopped destruction of 200 sites at Yakabindie. We are not opposed to responsible development, but cannot stand wanton destruction of our land, our culture, and our environment. We invite all people, from all places, to come together to walk with us, to send a clear message that we want the environment here, and our sacred places left alone."

*More information:*

*www.walkingforcountry.com/karlamalyi-walk/*

*www.ccwa.org.au/kintyre*

*www.walkingforcountry.com/walkatjurra-walkabout/*

### France: Protest at Bure nuclear waste dump site

On June 19, about 200 people established a protest camp in the forest of Mandres-en-Barrois, a short distance from the Bure site where French government agency ANDRA plans to build a high-level nuclear waste dump.

Protesters successfully established the camp, and have maintained a continuous presence since June 19. Fences that surround the construction site were removed, and barricades were built on the path to the site. Protesters plan to maintain the camp indefinitely and to do all they can to stop work at the site, but they will need ongoing support – especially when police attempt to uproot them.

Major deforestation and land clearing operations have recently been carried out by ANDRA despite local opposition.

Protesters said in a statement:

"Today, on Sunday, 19th, 2016, we have temporarily freed the communal woods of Mandres-en-Barrois from Andra's yoke with its CIGEO nuclear garbage dump. In front of our great wooden pavilion, assembled where the first steps of deforestation were taken, we, resisting inhabitants from here and other places, NGOs, collectives, declare the Woods of Mandres occupied!"

"Today we are occupying this forest to physically oppose ourselves to its being annexed by ANDRA. We are occupying it because we cannot stand to hear the crash of trees being uprooted, because their razor blade wire fences, their mercenaries and big dogs will not stop us from resisting. We are occupying it to stop the territory from being stolen away from the people by the hungry hands of nuclear industry.

"We are occupying this forest in order to prevent the beginning of works for CIGEO. We know that nothing in the shiny corridors of Parliament can stop the dump being dug, that only a territorial struggle can do it.

"We are occupying this forest with another type of life, joyful, inventive, collective, against nuclear society and its world of military and private security guards, of smiling experts and quiet dosimeters, a world set to exploit the ground and its people as much as possible. Where they want to deforest, we are building shelters. Where they raise wire fences, we open paths. Where they are manufacturing a desert of solitude and resignation, we are claiming our joy together, while resisting. So now, all summer, everyone must come to Bure to stop CIGEO!"

*More information:*

*http://en.vmc.camp*

*https://twitter.com/hashtag/occupybure*


# 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

**Subscriptions:**

US and Canada based readers should contact NIRS for details on how to receive the Nuclear Monitor (nirsnet@nirs.org).
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