

NUCLEAR MONITOR

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A PUBLICATION OF WORLD INFORMATION SERVICE ON ENERGY (WISE)
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Editorial

Dear readers of the WISE/NIRS Nuclear Monitor,

In this issue of the Monitor:

- Anica Niepraschk writes about Paladin Energy's uranium mine in Malawi
- Charly Hultén writes about the latest set-backs for Sweden's nuclear power industry
- We summarise the latest edition of the World Nuclear Industry Status Report
- Chris Goodall writes about troubled AP1000 reactor projects
- Charles Digges writes about Ecodefense's battle against the Russian government's 'foreign agent' laws.

The Nuclear News section has reports on the decision of a government commission in Quebec to recommend the continuation of a ban on uranium mining; plans for an action camp near a proposed nuclear dump site in Bure, France; and IAEA comments on counterfeit, fraudulent and suspect items used in nuclear power plants.

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

Uranium mining companies in Africa: The case of Paladin Energy in Malawi

Author: *Anica Niepraschk*

NM807.4478 Poor work conditions with a high exposure to radiation, such as when workers are forced to continue working despite an insufficient supply of dust masks at the mine. The use of flammable chemicals in dangerous quantities resulting in a flash fire causing the deaths of two people and serious injuries to another. A workshop accident causing the death of another worker. Several road accidents resulting in two more fatalities and in a spill of highly radioactive yellowcake, concentrated uranium, near the mine. The failure of a tailings dam causing the release of radioactive tailings into the environment and the 'controlled' release of tailings without public information on the residual contamination of the discharged water after treatment into the nearby Sere river which partly serves as



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drinking water source for local residents and runs into Lake Malawi, which provides a source of water and fish for millions of people.

These are just some of the reported incidents at the Kayelekera uranium mine in Malawi. The mine is located in the north of the country, close to the Tanzanian border and started operation in 2009. It is the country's first and only uranium mine and is operated by Paladin Africa, a 100% subsidiary of Paladin Energy, which is based in Perth, Western Australia. Since February 2014, Kayelekera has been placed in care and maintenance due to continuing low uranium prices and the high production cost of the mine. According to Paladin, this would make operation of the mine uneconomical and cost the company millions to run each year.

Paladin is the first of a large number of Australian junior exploration and mining companies trying to tap into Africa's huge uranium deposits. They are attracted not only by the large deposits but also by less sophisticated environmental and health regulations and legislative frameworks. Many African countries do not have appropriate mining and radiation legislation in place to minimise the risks of mining and uranium mining in particular, which is still relatively new to the continent and has unique radiological risks. Furthermore, tax and royalties' regulations as well as other legislation to ensure the host country benefits economically from the mining operations are often inadequate.

Junior companies which do not have the operational experience, financial and other capacity to comply with stricter regulations in the experienced uranium mining environments of Europe, North America and Australia increasingly try to use these circumstances to pave their way into the uranium market by venturing into Africa. This is well illustrated by Paladin's CEO and Executive Director John Borshoff, who in 2006 stated that: "The Australians and the Canadians have become over-sophisticated in their environmental and social concerns over uranium mining, the future is in Africa."

This attitude puts at risk the people and environment in the targeted African countries.

Holding Paladin accountable

In the case of Kayelekera, civil society has been enormously concerned over the impacts of the mine and tries to hold Paladin accountable. Access to the site and key monitoring documents like environmental reports and radiation doses for workers and the public were and are requested, but with the exemption of one site visit have continuously been denied or subject to avoidance strategies. Paladin, however, claims to comply with international reporting, health and safety as well as environmental standards. While Paladin recently talked about stewardship and sustainability at the Australian Uranium Conference¹ in Perth, it is worth having a look at the actual reality of its operations.

In a 2012 monitoring trip, followed up by a recent visit to Kayelekera, CRIIRAD², a French NGO specialising in independent radiation monitoring, found uranium levels in the Sere river downstream from the mine of 0.042 mg/l, exceeding the WHO guideline of 0.030mg/l and 194 times higher than upstream from the mine. There is no information publicly available on how radiation levels are monitored on and off site and on the measured individual exposure levels of workers. This is against both the official company policy and international labour laws. There is no indication as to what treatment or compensation is available to workers who suffer from long-term health impacts.

The tailings dam is located on a site with negative geological and hydrogeological characteristics such as seismic activity, fault lines, high rainfall and strong erosion and is not subject to proper confinement. Furthermore there is no clear plan available as to how run-off water will be handled after mine closure. These are just a few issues CRIIRAD raised on the significant impacts of Kayelekera on the health and safety of workers and on the environment.

Moreover, Paladin's operations fail to contribute to Malawi's economic development. Malawi is ranked the world's poorest country. Yet, as a recent report³ by ActionAid states, the country loses out on US\$43 million revenue from the Kayelekera operation due to a number of royalties and tax reductions stipulated in the mining agreement between Paladin Africa and the government of Malawi. According to the report, Paladin is also avoiding outstanding payments through transfer pricing. This refers to the company making tax-free payments to the Netherlands, where it has a holding company without staff, and thereby running Kayelekera on thin capitalisation. Paladin Africa thereby gains excessive interest reductions, further stripping Malawi of any economic benefit derived from the mining operations.

Operations like this damage not only the lives and livelihood of people in African countries but also the reputation of Australian mining companies abroad. The poor health and safety track record of Australian companies operating in Africa, including numerous fatalities⁴, is heavily criticised in a new report by an International Consortium of Investigatory Journalists.⁵ The report notes that some of the practices used in Africa would be impermissible and unthinkable in Australia.

Australian Senate Inquiry

In 2011, the results of a Senate Inquiry into Australia's relationship with African countries were published.⁶ Mining companies' operations in Africa were highlighted as having a good record in establishing policies on the protection of human rights and the environment but their implementation is often limited. So are corporate and social accountability. It was also found that this is a particular challenge with junior companies.

The Senate Inquiry recommended that the Australian government should undertake steps for Australia to become an Extractive Industries Transparency Initiative⁷ (EITI) compliant country and to continue to promote EITI principles and other corporate social responsibility instruments. EITI is a coalition of governments, companies and civil society groups, investors and international organisations, which has developed a global standard that promotes revenue transparency on a country level. It aims to strengthen governance by improving transparency and accountability over payments and revenues in the extractives sector.

Although there is a broad support for developing countries joining EITI, few industrialised countries have. In 2001, under a Labor Party government, Australia stated that it would implement an EITI pilot, which was completed last year. A multi-stakeholder group analysed the report and found that moving to implementation of EITI candidature would be appropriate. This result is currently being considered by the conservative Liberal/National government.

Becoming EITI compliant would set a good example for other countries to follow as well as build trust in Australia's exploration and mining operations overseas. A further recommendation by the Senate Inquiry was to establish and fund a special unit tasked with developing a regulatory framework model for the mining and resources sector, which African countries could



Paladin's Kayelekera uranium mine in Malawi.

consider adopting according to their requirements. This recommendation has so far not been pursued.

It is clear that essential conditions for local benefits from mining operations, like the experience and frameworks to negotiate equitable agreements, regulation, legislation and the mechanisms for local oversight and regulatory enforcement have to be developed and implemented in the respective host countries. This includes, for example, modernising mining and revenue laws, the administration of land title and mining registries and the creation of publicly available databases.

There is an ongoing need for civil society engagement with and oversight of Australian mining companies

operating overseas. Time and time again problems are identified not by governments or regulators, but by workers and civil society. That will not change even if Australia does become EITI compliant, but EITI compliance would help facilitate such engagement and thereby pave the way to improved accountability and transparency. Achieving a responsible and accountable mining culture, however, takes much more than that and is an ongoing challenge – both at home and abroad.

Anica Niepraschk is a political scientist specialised in governance issues and civil society participation. She has a working background in Zambia, the DR Congo and Botswana and currently follows governance issues in the nuclear sector.

References:

1. www.verticalevents.com.au/uranium2015/programme.html
2. www.criirad.org/english/presentation.html
3. www.actionaid.org/australia/taxpower
4. http://projects.icij.org/fatalextraction/?_ga=1.155542907.1926188625.1437009581
5. www.icij.org/project/fatal-extraction/australian-mining-companies-digging-deadly-footprint-africa
6. www.aph.gov.au/Parliamentary_Business/Committees/Joint/Completed_Inquiries/jfadt/africa%2009/report
7. <https://eiti.org/>

LET THE SUN SHINE!

The Smiling Sun logo was created in 1975 in Denmark. The anti-nuclear power movement in dozens of countries soon adopted the logo. In 1977 the Smiling Sun was trademarked, and it became the world's strongest brand against nuclear power.

The WISE (World Information Service on Energy) network was initiated and partially founded (in 1978) by the revenues of worldwide sales of the Smiling Sun items. It is therefore with pride that we present our renewed web shop. We will add new relevant items in the near future. If you want to sell your material via our website, please contact us for possibilities.

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<http://www.antinuclearshop.org>

Sweden's nuclear park shrinks again

Author: Charly Hultén – WISE Sweden

NM807.4479 On 23 June, E.ON Sweden announced plans to shut down two of the three reactors at Oskarshamn between now and 2020. The reactors' unprofitability is cited as the principal reason for the decision, but the move is also in keeping with E.ON's overall turn toward sustainable energy sources.

O1 and O2 (which started up in 1974 and 1972, respectively) are Sweden's oldest reactors, and are also among the four smallest. As reported earlier this year, Vattenfall announced plans to close its oldest reactors, R1 and R2 at Ringhals, in about the same time frame.¹

Interviewed after E.ON's announcement, a senior consultant to Vattenfall summed up the situation: "The way the energy market works today, all sources are pooled. The cheapest source gets to produce, and we [R1 and R2] weren't it."

E.ON's motives are the same. Like Vattenfall, it sees no prospect of the price of electricity rising between now and 2020. The two companies are simply cutting their operating losses. In this present case, however, E.ON, which owns 54.5% of the operator, OKG, has taken the decision against the will of minority owner, Fortum (45.5%).

The closure of four reactors within the next five years will bring the Sweden's nuclear park down to half, from twelve to six. Nuclear production capacity will, however, not be reduced by the same proportion. The remaining reactor in Oskarshamn (1985), for example, produces 30% more electricity than O1 and O2 combined. Yet, when Vattenfall announced the closure of R1 and R2, some analysts pointed to six reactors as a 'pain threshold', a point beyond which occasional electricity shortages in the south of Sweden could not be ruled out.

Sweden has got by without O1 and/or O2 for some time. Both have long suffered the frailty of old age. O1 has been on and offline intermittently for years. O2 was taken offline in 2006 for 'modernization' – a project that to date has cost approximately 8 billion SEK (€854m; US\$928m) The reactor is scheduled to resume production at the end of 2015, but whether it actually will be brought online remains an open question. As noted above, the owners are not in agreement.

Why pour 8 billion SEK into O2? In short: to convert the reactor to use mixed uranium-plutonium (MOX) fuel. It's a decades-long saga:

References

1. Charly Hultén, 7 May 2015, 'Sweden: Vattenfall announces early retirement of two reactors', Nuclear Monitor #803, www.wiseinternational.org/nuclear-monitor/803/nuclear-monitor-803
2. www.sodra.com/en/Energy/Production-and-consumption/
3. www.ikea.com/ms/sv_SE/this-is-ikea/people-and-planet/energy-and-resources/index.html

Sources

In English:

Fortum: "Fortum would prefer continued operations at Oskarshamn nuclear power units 1 and 2" (Press release, 23 June 2015), www.fortum.com/en/mediaroom/Pages/fortum-would-prefer-continued-operations-at-oskarshamn-nuclear-power-units-1-and-2.aspx

In Swedish:

- Mats Knutson/Sveriges Television: "Två kärnkraftsreaktorer kan stängas", 4 juni 2015, www.svt.se/nyheter/inrikes/tva-karnkraftsreaktorer-stangs
- E.ON: "E.on föreslår ny inriktning för OKG" (Press release, 23 June 2015), www.eon.se/press#/pressreleases/e-on-foereslaar-ny-inriktning-foer-okg-o2-tas-ur-drift-tidigare-aen-planerat-1181229
- Monica Kleja: "Eon vill stänga reaktor O2 i förtid", Ny Teknik, 23 juni 2015, www.nyteknik.se/nyheter/energi_miljo/karnkraft/article3917000.ece
- Monica Kleja: "Tungt beslut för Eon" Ny Teknik, 23 juni 2015, www.nyteknik.se/nyheter/energi_miljo/karnkraft/article3917025.ece
- Sveriges Television: "Eon vill stänga Oskarshamn 2", 23 juni 2015, www.svt.se/nyheter/inrikes/eon-vill-stanga-oskarshamn-2

- In 1969, OKG contracted with Sellafield in England to reprocess waste from O1 and O2, soon to come online. Between 1969 and 1984 OKG shipped over 140 tons of waste and paid a total of 650 million SEK to have it reprocessed.
- In 1984, Sweden changed its policy, forbidding export of waste and mandating direct intermediate storage, pending the creation of a geological repository for nuclear fuel waste in Sweden.
- What to do with the waste already at Sellafield? In 2006, OKG was granted permission to use MOX fuel in O2 and O3. The decision was controversial, but authorities deemed import of MOX, made out of OKG's waste, to be more in keeping with the new policy.
- But Sellafield's backlog was long, and years passed. The Sellafield MOX Plant was also wracked with technical problems. In 2011, a decision was taken to shut it down, and in March 2014 Swedish authorities authorized OKG to sell the waste to the British Nuclear Decommissioning Authority, who pledged that it would not be used in nuclear weaponry. With the sale, the MOX scheme would appear to have ended.

Electricity prices

Electricity prices this year are the lowest since 2000. Favorable winter conditions have filled the northern dams. But nuclear's disadvantage on the market is not just of the moment. Analysts discussing the recent phase-out decisions point to longer-term trends. The 'Energiewende' in Germany, and large-scale private investments in energy efficiency measures and renewables (Södra Cell², a paper pulp factory a stone's throw from Oskarshamn, and IKEA, for example³), are depressing the market and will continue to do so. In addition, nuclear operators face costly investments to meet new safety requirements, such as external core-cooling systems – a lesson from Fukushima. On the margins, a rise in the Swedish reactor capacity tax has also been proposed.

Choosing to look to the bright side, Jonas Abrahamsson, CEO for E.ON Sweden, sums up the situation: "Under current market and political conditions, the trend is clear. We will see fewer, but larger reactors. O3, one of the largest reactors in Sweden today, producing more electricity than O1 and O2 combined, will play a strategic role in stabilizing the Swedish energy supply system for many years to come."

A historic day for Swedish wind power

Wind power in Sweden passed a milestone on 31 May 2015. For the first time ever, Swedish windmills produced more wattage and energy (3,412 MW) than the country's nuclear reactors (3,386 MW). The period was only a little over 90 minutes, but is historic.

Professor Thomas Kåberger, former Director of the Swedish Energy Agency and perhaps Sweden's foremost expert on energy, said:

"When nuclear power operates at maximum capacity it can produce 10 GW, whereas maximum production for wind power is roughly half that much. But, for various reasons both nuclear reactors and wind power often operate at less than maximum capacity. Wind power output is predictable because it depends on how windy it is. Nuclear power is less sensitive to the weather, but it is susceptible to technical problems that result in major, sometimes totally unexpected, outages. These past five years, Sweden oldest reactors have not been producing well, and at the moment, for a variety reasons, seven of the ten reactors are down. ..."

Sources

– "Milstolpe: Vindkraften spöade kärnkraften" *Miljöaktuellt*, 1 juni 2015, <http://miljoaktuellt.idg.se/2.1845/1.629411/historisk-ogonblick-nar-el-fran-vindkraft-storre-an-karnkraft>

– Svensk Vindenergi: "Vindkraft har stor betydelse" (press release), 2 juni 2015, www.vindkraftsbranschen.se/blog/pressmeddelanden/vindkraft-har-stor-betydelse/

Wind power is often criticized for not producing the same amount of energy from day to day. But, as Svensk Vindenergi (Swedish Wind Energy trade association) points out, wind power outages are small relative to what happens when a nuclear reactor is taken off line:

"If seven out of ten reactors can be off line, and it doesn't result in any shortages, it shows we have a robust electricity supply system. It also shows that the system can handle the considerably smaller variations associated with wind power production."

One might say the 'record' is a fluke. On May 31, after all, only three nuclear reactors were on line. But, statistics show that on a regional basis, wind power production is often second only to hydro (see nordpoolspot.com). Svensk Vindenergi is confident that this will occur even more frequently as wind power continues to attract investments. In Sweden today, wind power has a potential for expansion on a large scale at the lowest cost per watt.

Don't Nuke the Climate – campaign updates

On June 17 we launched the 'Don't Nuke the Climate' campaign with an international press release, sent out by the seven launching organizations in their respective countries. Those organizations include the producers of the *Nuclear Monitor* – the World Information Service on Energy (Amsterdam) and the US-based Nuclear Information & Resource Service. Within a day, 60 organizations had already signed the petition. By July 22, exactly 200 NGO's had signed the petition.

We are very happy that the global movement 350.org has come out with the following statement:

"At 350.org we work towards replacing dirty fossil fuels with clean and renewable energy, not nuclear power. Even after decades of extensive government subsidy, the cost of nuclear power remains dauntingly high, in part because the potential of catastrophic accident requires the commitment to truly massive building projects. The cost of wind and especially sun are decreasing on an almost daily basis: solar panels down 75% in the last seven years. Meanwhile, the costs of nuclear power just keep rising, and its problems mirror those of fossil fuels: extractive mining, waste management issues, and a centralization of power. Conservation and renewable continue to be a far preferable strategy to addressing the climate crisis."

On September 2 the Greens in the European Parliament will host a conference – 'Dismantling the nuclear

argument: Why nuclear is no climate-friendly solution!' – where we will present our campaign.

For more information see www.rebecca-harms.de/index.php/presse/termine

Four things you can do:

- Join the virtual march to Paris, make your own customized banner and have it put on the campaign website: <http://wiseinternational.org/campaign/cop-21-paris>
- We ask organizations of all kinds to sign the petition, which will be handed over to the negotiators in Paris, in December. Sign here: <http://wiseinternational.org/campaign/sign-petition>
- Prepare for the international day of action against false solutions, on September 27, contact us for more details and see <http://wiseinternational.org/international-day-actions-against-nukes>
- Buy flags, and come to the December 12 biggest ever climate march in Paris. We are organizing a strong, lively anti-nuclear continent in the march. For €7 plus postage we will send you a beautiful flag (English, Japanese, Spanish, German or Dutch). See: <http://wiseinternational.org/webshop>

– Peer de Rijk: Director –
World Information Service on Energy (Amsterdam)

World Nuclear Industry Status Report 2015

NM807.4480 The 'World Nuclear Industry Status Report 2015' (WNISR) has been released. These annual reports provide a vast amount of useful information about the global nuclear industry and useful summaries of the development of renewable energy. Here we summarise some key findings.

Startups and shutdowns. In 2014, five reactors started up (three in China, one in Argentina, one in Russia) and one was shut down (Vermont Yankee in the US). In the first half of 2015, four reactors started up in China and one in South Korea, while two were shut down (Doel-1 in Belgium and Grafenrheinfeld in Germany).

Reactor operation. There are 31 countries operating nuclear power plants. A total of 391 reactors (three more than a year ago) have a combined installed capacity of 337 GW (5 GW more than a year ago). Not a single unit generated power in Japan in 2014, and WNISR classifies 40 Japanese reactors as being in Long-Term Outage (LTO). Besides the Japanese reactors, one Swedish reactor meets the LTO criteria.

Industry in decline: The 391 operating reactors – excluding LTOs – are 47 fewer than the 2002 peak of 438, while the total installed capacity peaked in 2010 at 367 GW before declining by 8% to 337 GW, which is comparable to levels last seen two decades ago. Annual nuclear electricity generation reached 2,410 terrawatt-hours (TWh) in 2014 – a 2.2% increase over the previous year, but 9.4% below the historic peak in 2006.

Share in power mix. The nuclear share of the world's power generation remained stable over the past three years, with 10.8% in 2014 after declining steadily from a historic peak of 17.6% in 1996. Nuclear power's share of global commercial primary energy production also remained stable at 4.4%, the lowest level since 1984.

Reactor age. In the absence of major new-build programs apart from China, the mean age of the world operating nuclear reactor fleet continues to rise, and by mid-2015 stood at 28.8 years (the mean age of the 41 reactors classified as LTO is 26.4 years). Over half of the total, or 199 reactors, have operated for more than 30 years, including 54 that have run for over 40 years. One third (33) of the US reactors have operated for more than 40 years.

Lifetime projections. If all currently operating reactors were shut down at the end of a 40-year lifetime, by 2020 the number of reactors would be 19 below the number at the end of 2014. In the following decade to 2030, 188 units (178 GW) would have to be replaced – five times the number of startups achieved over the past decade.

Construction delays. As in previous years, 14 countries are currently building nuclear power plants. As of July 2015, 62 reactors were under construction. Almost 40% of the projects (24) are in China. All of the reactors under construction in 10 out of 14 countries have experienced delays, mostly year-long. At least three-quarters (47) of all reactors under construction worldwide are delayed. Five reactors have been listed as "under construction" for more than 30 years.

Construction times. The average construction time of the latest 40 reactors (in nine countries) that started up since 2005 – all but one (in Argentina) in Asia or Eastern Europe – was 9.4 years with a large range from 4 to 36 years.

Construction starts. In 2014, construction began on three reactors, one each in Argentina, Belarus, and the United Arab Emirates (UAE). This compares to 15 construction starts – of which 10 were in China alone – in 2010 and 10 in 2013. China did not start a single new construction in 2014, but started two in the first half of 2015 – so far the world's only starts in 2015. Historic analysis shows that construction starts in the world peaked in 1976 at 44. In the 4.5 years from 1 January 2011 and 1 July 2015, first concrete was poured for 26 new plants worldwide – fewer than in a single year in the 1970s.

Construction cancellations. Between 1977 and 2015, a total of 92 (one in eight) of all construction sites were abandoned or suspended in 18 countries in various stages of advancement.

Newcomer program delays. Only two newcomer countries are actually building reactors – Belarus and the UAE. Further delays have occurred over the year in the development of nuclear programs for most of the more or less advanced potential newcomer countries, including Bangladesh, Egypt, Jordan, Poland, Saudi Arabia, Turkey, and Vietnam.

Generation III Delays. Twenty-nine years after the Chernobyl disaster, none of the next-generation or so-called Generation III+ reactors has entered service, with construction projects in Finland and France many years behind schedule. Of 18 reactors of Generation III+ design (eight Westinghouse AP1000, six Rosatom AES-2006, four AREVA EPR), 16 are delayed by between two and nine years. A number of causes for delays have been assessed: design issues, shortage of skilled labor, quality control issues, supply chain issues, poor planning, and shortage of finance. Standardization did not take place, and the introduction of modularized design seems to have simply shifted the quality issues from construction sites to module factories. Serious defects found in several French pressure-vessel forgings could scuttle the entire EPR enterprise.

Operating cost increases. In some countries (including Belgium, France, Germany, Sweden, and the US), historically low inflation-adjusted operating costs have escalated so rapidly that the average reactor's operating cost is barely below, or even exceeds, the normal band of wholesale power prices. This has led to a number of responses from nuclear operators.

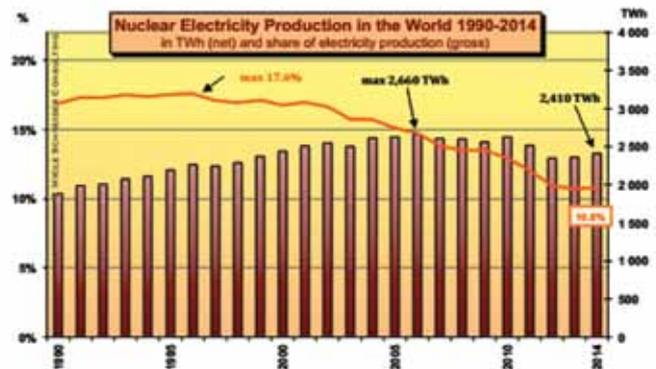
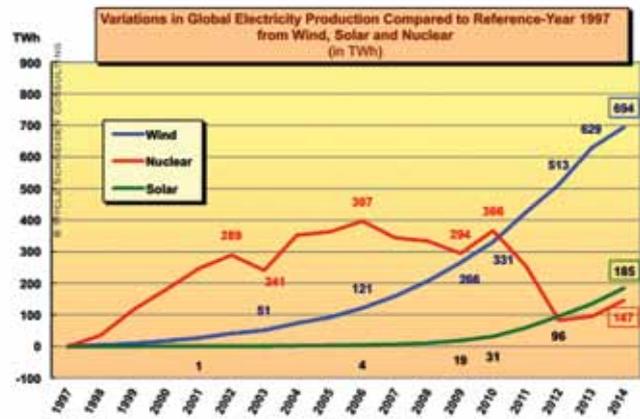
Nuclear power vs. renewable energy deployment. After two years of decline, global investment in renewable energy increased to US\$270 billion (+17%) in 2014, close to the all-time record of \$278 billion in 2011, and four times the 2004 total. Global investment decisions on new nuclear power plants remained an order of magnitude below renewables investments.

Installed capacity. In 2014 almost half (49%) of the added electricity generating capacity was new renewables (excluding large hydro), including 49 GW for new wind power and 46 GW of solar photovoltaics. Since 2000, wind added 355 GW and solar 179 GW – respectively 18 and 9 times more than nuclear with 20 GW.

Electricity generation. Brazil, China, Germany, India, Japan, Mexico, the Netherlands, and Spain – a list that includes three of the world's four largest economies – now all generate more electricity from non-hydro renewables than from nuclear power. These eight countries represent more than three billion people or 45% of the world's population.

There is much more of interest in the WNISR report, including chapters on new reactors types (especially small modular reactors) and the Fukushima disaster.

Mycle Schneider, Antony Froggatt et al., July 2015, 'World Nuclear Industry Status Report 2015', www.worldnuclearreport.org/-2015-.html



Source: World Nuclear Industry Status Report 2015

AP1000 - a bundle of trouble?

Author: *Chris Goodall*

NM807.4481 The AP1000 is the next generation design being developed by Westinghouse, a subsidiary of Toshiba. Westinghouse constructs the AP1000 projects in partnership with Chicago Bridge and Iron (CB&I), probably the world's most experienced builder of large power stations.

The AP1000 is a 1.1 GW plant using a design based on a much smaller power station developed by Westinghouse 20 years ago. One important fact is that no stations using the original design were ever built. However, the advantages of the AP1000 are said to include a relatively simple design, a high level of passive safety and modular construction.

Modular construction means that components can be manufactured elsewhere and then shipped to the power station site. However US sites have had 5,000 workers on site at the same time, posing the some of the same huge management challenges that were experienced at the Finnish EPR site.

Four AP1000 reactors are in construction in the US and four in China. The US plants are at two separate sites in the state of Georgia ('Plant Vogtle', two AP1000s) and South Carolina ('Summer', two AP1000s).

I focus here on the experience in Georgia, but note that similar three-year delays have also happened at Summer in South Carolina, where serious cost overruns have also taken place.

Plant Vogtle - construction times more than doubled

Vogtle 3 and 4 are being built in the same complex as two earlier nuclear power stations. After delays in final design approval, they were finally licenced in February 2012. Near-concurrent construction of the two plants started in May 2013 with completion of the first planned for April 2016.

Original estimates for the total price to the utilities buying the power stations were about US\$14bn (about £9.5bn). The price to be paid was essentially fixed, meaning that most of the construction risk is borne by Westinghouse and CB&I.

The most recent announcement of construction delays came in February 2015 when the station's eventual 45% owner (Georgia Power) told the state regulator that the partnership building the station had recently estimated that the eventual completion date for Vogtle 3 would be June 2019. Vogtle 4 would be finished in June 2020.

The expected delay for Vogtle 3 is now 39 months, more than doubling the initially expected construction time. The project is not yet half complete.

Costs are rising

Although the contract price has not risen significantly because it is largely fixed, the cost to electricity customers in the state of Georgia has increased. This is

because the utilities that will eventually own the two new stations have been granted electricity price increases by the state regulator to cover the higher financing costs of Vogtle 3 and 4.

The utilities have been paying for individual elements of the two new plants as they are completed. The long delays mean that the interest costs are higher than expected and the regulator has already granted rate increases to compensate the eventual owners.

People in Georgia are already paying a supplement of 6% of their bills to finance the new nuclear station – Indeed Friends of the Earth US suggests that as much as 11% of their electricity bills may be supporting the project.¹

Although the deal was a fixed price contract, the company buying the largest share of the finished plants is in legal battles over extra costs that the contractors claim that the purchasers should bear.

We can reasonably expect that the cost to construct the stations has also increased. However industry estimates of the eventual final cost to the contractors are vague and imprecise. They currently seem to be around US\$18bn (~£12bn). This seems low to me, given that the total project is now expected to take more than twice as long as originally expected.

CB&I says that Westinghouse will eventually pay most of the overrun costs but we can safely presume that this issue will also end up in court.

Georgia Power is losing faith in its contractors

Until recently the main buyer, Georgia Power, was reasonably content with the progress of the construction. However its 2015 submissions to the Georgia regulator have become increasingly concerned in response to the latest estimates of delay.

Note that Georgia Power has a difficult line to steer: it cannot be too critical of the contractors because otherwise the regulator that oversees it and grants its rate increases will question why it agreed to build the first new nuclear plant in the US for several decades in the first place!

Most recently, the company's May 2015 testimony² prepared for a hearing has been openly critical of the contractors Westinghouse and CB&I:

"In general, the Company, like the other Owners, has been disappointed with the Contractor's performance under the revised IPS (project plan). The Contractor has missed several key milestones since the publication of the revised IPS in January 2015, including several milestones relating to critical-path or near-critical-path activities such as the assembly of CA01 (part of the central reactor), the delivery of shield building panels, and work on concrete outside containment.

"The Contractor has also encountered difficulties in ensuring that new vendors produce high-quality, compliant components per the IPS projections." (p.15)

References:

1. www.theecologist.org/blogs_and_comments/commentators/2240101/toshibas_nuclear_project_cheaper_than_hinkley_c.html
2. www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=158302

Georgia Power is now indicating that it has little faith in the contractor's ability to keep to the new delayed timetable.²

"The Contractor's schedule performance on critical path work such as concrete placements to start shield building installation and inside containment installation are challenges to the Contractor's ability to adhere to the revised IPS.

"The Contractor must continue to improve its schedule performance, maintain these improvements, and successfully resolve RCPs / squib valves / CMTs (components with severe quality or delivery problems) in order to complete the Facility by the currently projected substantial completion dates." (p.15)

China's AP1000s - a three year construction delay

Cost data from the Chinese construction projects is difficult to find. But they have also experienced significant construction difficulties. Building at Sanmen began construction in August 2009 and was originally expected to be finished by August 2013.

As with Vogtle, construction was said to be on schedule a year into the project and even in March 2012 completion was still officially planned for 2013. Recent updates suggests that completion will actually take place in 2016, also a three year delay.

The design used in China is simpler than that used in the US, and it may well be possible for Chinese constructors to build much more quickly and cheaply. However the modifications are unlikely to be acceptable to Western regulators. For example, the power stations are not designed to survive a direct hit from an airliner, a US requirement.

The questions in the minds of all concerned are surely these:

- How many of the problems at Vogtle, Summer and elsewhere are inherent to the construction of a large third generation nuclear power station?
- And how many simply arise because these are 'first of a kind' projects?
- Will new nuclear projects around the world avoid the major problems that have affected the first eight AP1000s because the construction companies have learnt how to build these huge projects more efficiently?
- Or is a safe third generation nuclear power station beyond the capacity of even the most experienced contractors to build to a tight timetable and at a predictable cost?

I'm afraid I don't think the answer is at all clear.

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Abridged from The Ecologist, 17 July 2015, www.theecologist.org/blogs_and_comments/Blogs/2952108/moorsides_ap1000_nuclear_design_is_any_better_than_the_epr.html

Russian anti-nuke group waves off foreign agent law, refuses to pay fines

Author: Charles Digges – Bellona

NM807.4482 Russia's Ecodefense anti-nuclear group has again been fined for refusing to register as a "foreign agent" with the country's Justice Ministry in a court hearing to which the group's co-chair, Vladimir Slivyak, said the organization had not even been invited to attend.

Slivyak told Bellona in an interview that Ecodefense was informed only Monday, July 20 that a judge in the Russian enclave of Kaliningrad had on July 3 levied another 100,000 ruble (\$1,700) fine against his organization for failing to register as a foreign agent.

He said his group never received any summons for the July 3 hearing, and as such, would refuse to pay the fine.

The foreign agent self-appellation is required under Russia's controversial 2012 NGO law stipulating that non-profits receiving foreign funding and engaging in vaguely defined political activity must register as foreign agents and submit to onerous reporting and auditing procedure.¹

The law also requires NGOs that are so designated to indicate on all material they publish that they are foreign agents. The vast majority of NGOs in Russia ignored the law when it took effect in November 2012, which said that the foreign agent term characterized them as spies or traitors.²

The group denounced the law in a Russian-language statement yesterday, saying, "We consider the actions of the Justice Ministry (which led to our inclusion on the so called roster of 'foreign agents') deeply politically motivated and directed at the destruction of the reputation of the civil society movement, which is defending Russia's rights."³

In July, apparently frustrated by the lack of foreign agents signing up, President Vladimir Putin gave broad powers to the Justice Ministry to list NGOs as agents on its own.⁴ Several days later, Ecodefense was ensnared in that dragnet.⁵

The group, which was the first ecological group to be named a foreign agent, was told that it ran afoul of the law for protesting the construction of the Baltic Nuclear Power plant. According to a letter Ecodefense received from the Justice Ministry, speaking out against government plans to build nuclear station is tantamount to speaking out against the government – which the Justice Ministry characterized as "political activity."

By Slivyak's own admission, and as stated openly in audits, the group has received funding from the European Union and several German environmental groups.

Ecodefense was previously fined 300,000 rubles (\$5,200 at the current exchange rate) in September for refusing to voluntarily register itself on the foreign agent list.⁶

Slivyak said yesterday that his group won't pay that fine either. He also said that the group's choice to ignore the fines has not resulted in any official interference with the group's environmental activities.

"There is international cooperation and solidarity [with Russian NGOs], he said. People are helping us to continue our work."

Indeed, Slivyak is on a several week tour of South Africa to in an effort to thwart Russian state nuclear corporation Rosatom's efforts to forge several nuclear power plant deals the company is trying to make with Johannesburg. He experienced no interference from authorities.

"Civil disobedience is the instrument of change, when you feel change is absolutely needed," he said. "We ignore their law – we will not give [Russian authorities] any reports, we will not mention that we are foreign agents in publications, we won't do audits as they request. We just tell them that we are not agents – we won't do this because only agents do this, and we are not agents."

He added that the authorities notified the group that it would be required to undergo another audit in August.

"They want [us to present] everything, like descriptions of projects, financial details, publications – everything," he said. But he said the group intends to disappoint inspectors when they come.

"Most probably we will just not give them anything," he said.

Such a strident approach, however, is not without its risks, and Slivyak noted that his organization's days might be numbered.

"We expect that after the August inspection, they will start the process of closing us down," he said.

A Justice Ministry spokesman also told Bellona that, under the law, legal actions could escalate to imprisoning Ecodefense's leaders.

But Slivyak remained optimistic that Ecodefense's choice to simply ignore the NGO law would have a positive effect in the long run.

"You never know what the government is planning," he said. "We will get our country back sooner or later – it's just a matter of time."

Until then, Slivyak said, his group will continue to wave off government fines and intimidation and go about its anti-nuclear advocacy.

"The ideal situation is to not follow rules when you think they're unfair," he said.

According to a Human Rights Watch tally, the Justice Ministry has listed 74 organizations on its foreign agent list as of July 8.⁷ Alongside Ecodefense, they include many more environmental organizations like Bellona Murmansk⁸, Planeta Nadezhd⁹ (Planet of Hopes, an advocacy group for South Urals residents affected by radioactive contamination from the Mayak Chemical Combine), Dront of Nizhny Novgorod, Rostov's Ecologika, Samara's, Educational Center for Environment and Security and many others.

The breakdown of foreign agents also targets groups affiliated with press rights, and gay, lesbian, bisexual and transgender advocacy.

Reprinted from Bellona

<http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2015-07-bold-russian-anti-uke-group-waves-off-foreign-agent-law-refuses-pay-mounting-fines>

References:

1. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2012-07-breaking-russian-duma-passes-controversial-ngo-foreign-agent-bill-in-landslide-vote>
2. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2012-11-russian-ngos-receiving-foreign-funding-greet-new-law-to-register-as-foreign-agents-with-yawns>
3. <http://ecodefense.ru/2015/07/21/opyatshtraf/>
4. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2014-06-new-law-allowing-russia-justice-ministry-name-foreign-agents-claims-five-ngos>
5. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2014-06-breaking-russian-environmental-group-tarred-foreign-agent-protesting-nuclear-plant>
6. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2014-09-ecodefense-group-says-will-appeal-fine-registering-foreign-agent>
7. www.hrw.org/news/2015/07/08/russia-government-against-rights-groups
8. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2015-04-bellona-murmansk-called-foreign-agent-court-receives-small-fine>
9. <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2015-06-httpbellona-orgnewsnuclear-issuesnuclear-russia2008-10-chelyabinsk-region-commemorates-kyshtym-disaster-chernobyls-secret-older-brother>

NUCLEAR NEWS

Quebec commission recommends against uranium mining

The province of Quebec imposed a moratorium on new uranium exploration and mining permits in April 2014 and announced that an inquiry would be carried out. The inquiry – conducted by the Bureau d'audiences publiques sur l'environnement (BAPE) – has been completed and it recommends against uranium mining in the province.

The BAPE commission concluded that there remains significant uncertainty and gaps in existing scientific and technological knowledge regarding uranium mining, the management of uranium waste, and the associated health and environmental impacts.

The Cree Nation has welcomed the BAPE report, released on July 17 following a year-long inquiry and public consultation process.

"The BAPE's report confirms what the Cree Nation has long maintained: that uranium development poses unique and significant risks for our lands, our environment, our communities and our future generations," said Grand Chief Dr. Matthew Coon Come. "The report reflects what we observed in the consultation process, that the overwhelming majority of the population, in Cree communities and across Quebec, oppose uranium development. ... The Cree Nation greatly appreciates the support we have received on this issue from other Aboriginal peoples and from individuals, groups and municipalities across Quebec."

Québec's minister for sustainable development, environment and climate change David Huertel said that the BAPE report will be analysed by an inter-ministerial committee.

Quebec Mining Association president Josée Méthot praised the decision to review the report by an inter-ministerial committee. "We are pleased that the government does not immediately reject the uranium industry that could create a new industry in Quebec", Methot said.

The BAPE report stipulates that should the government decide to permit uranium mining to go ahead, it must ensure social acceptability through an information program and cooperation and consensus-building strategy; overcome "technological uncertainties and current gaps in scientific knowledge"; and develop a legal framework.

The report states: "During its inquiry and hearings, the commission found that substantial progress has been made in recent decades in the areas of mining technology and waste confinement strategies, as a result of uranium mining experience in Canada and elsewhere in the world. On the other hand, many scientific and technological limitations and uncertainties still persist and numerous questions have yet to be answered."

English and Cree versions of the Summary and Conclusions of the BAPE's report: www.bape.gouv.qc.ca/sections/rapports/publications/bape308_cri_anglais.pdf

Sources:

<http://standagainsturanium.com/news/the-cree-nation-urges-the-quebec-government-to-heed-the-bapes-recommendations-regarding-the-uranium-sector-in-northern-quebec/>

www.world-nuclear-news.org/UF-Quebec-uranium-commission-makes-recommendation-2007157.html

Bure, France: Action camp against nuclear waste

After half a century, the French nuclear industry is still without a solution to the problem of long-term management and disposal of nuclear waste. The French government now resorts to authoritarianism, seizing land to imposing a nuclear waste dump. After several false starts, 20 years ago the French Agency for the Management of Nuclear Wastes (ANDRA) went to Bure, in a sparsely-populated area of the Meuse region of north-eastern France, to undertake its investigations.

With few people living there (about seven people per sq km), Bure was seen as an ideal location. An underground laboratory was created there in 2001 and in 2006 ANDRA decided to convert it into an "industrial centre for geologic management" (CIGEO) despite local public opposition. There is still no nuclear waste there: the start of the site's preparation is planned for 2017 while the first batch of nuclear waste could be there by 2025.

So far all legal actions to stop ANDRA have failed. They ignored the 42,000 people who called for a referendum about nuclear waste management; they swept away the precautionary principle which the public consultation recommended; and finally they ignored local by-laws forbidding the burying of nuclear waste.

With the help of local and national organizations, and anti-nuclear activists from Germany, the local French group opposing Bure bought a house 10 years ago as a reply to ANDRA's laboratory. Thanks to donations from locals and visitors, it has been possible to refurbish this "Revolution House". As a community meeting place, this house was an opportunity to gather independent information about the nuclear industry, to make use of non-nuclear energy resources, etc. This place, where many activists from France and elsewhere have been able to meet each other, is now at the heart of the growing local opposition.

A local activist said: "What we want is not just to put pressure on politicians and nuclear industry for an alternative to geological disposal, but for a complete end to nuclear energy production and its inevitable byproduct. Half of the nuclear waste they plan to bury is not produced yet. Current storage units are full, so it becomes urgent for the French government and the nuclear industry to hide what is left and create enough space for the storage of future waste. In short, they are looking for a quick-fix solution that will legitimate their nuclear electricity program which is perpetuating the catastrophe."

Join French and other international anti-nuclear campaigners in Bure, from August 1–10, to build opposition to CIGEO. The August convergence will not only inform people but also move people to action. It will also be a great occasion to plan actions for the next United Nations Conference on Climate Change (COP21) in December 2015 in Paris, hence linking anti-nuclear and climate struggles.

More information and contact:

Web: <http://en.vmc.camp/the-camp/practical-infos/>

Email: vmc@rise-up.net

To read about the background and history of the Bure debate, see Nuclear Monitor #550, June 2001, <http://wiseinternational.org/nuclear-monitor/550/bure-and-french-nuclear-waste-dilemma>

Counterfeit, fraudulent and suspect items

The International Atomic Energy Agency has released its annual Nuclear Technology Review, which includes the following comments on counterfeit, fraudulent and suspect items used in nuclear power plants (NPPs):

"Counterfeit, fraudulent and suspect items (CFSIs) are becoming an increasing concern for operating organizations and regulators and instances of CFSIs and related quality documentation are being detected. In some cases, NPPs that are operating or that are under construction have experienced significant economic impacts, including temporary plant shutdowns, as consequences of using CFSIs. Operating organizations are taking a growing number of preventive measures, including increased awareness and training, better procurement specifications and inspections as well as a reduced use of brokers. Reporting on CFSIs, including those detected prior to plant installation, is increasingly required by regulators."

IAEA, July 2015, Nuclear Technology Review 2015, www.iaea.org/About/Policy/GC/GC59/GC59InfDocuments/English/gc59inf-2_en.pdf

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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