

NUCLEAR MONITOR

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MONITORED THIS ISSUE:

REFUELING VERMONT YANKEE TO CONTINUE

Entergy Corporation has announced that its board of directors has voted to continue with a planned refueling of the Vermont Yankee Nuclear Power Plant (Vermont, USA). The board has approved the US\$60 million refueling during despite failing to receive a 20-year extension of its license to operate the nuclear plant from Vermont's legislature. Vermont Yankee's current operating license is due to expire March 2012.

(731.6154) WISE Amsterdam - On February 24 2010, in a move that sent shock waves through the nuclear power industry, the Vermont State Senate voted overwhelmingly (24-6) to close the Vermont Yankee reactor when its current operating license expires in March 2012. Later that same year, on November 2, the people of Vermont elected Peter Shumlin as Governor. Shumlin is a well known opponent of extending the Vermont Yankee license past its expiration date in 2012.

Vermont is the only state in the country with a law giving its Legislature a say over a nuclear plant's re-licensing. In the memorandum of understanding (MOU) that Entergy signed when it bought the plant in 2002, it agreed to seek a state-issued Certificate of Public Good and not sue the state if the CPG was denied. The Vermont Senate voted last year to direct the Public Service Board not to issue a Certificate of Public Good (CPG) for the plant. Despite all that, Entergy received a 20-year license extension from the U.S. Nuclear Regulatory Commission (NRC) in March 2011.

In April, two of Entergy's units, Entergy Nuclear Vermont Yankee LLC and Entergy Nuclear Operations Inc., filed a complaint in U.S. District Court for the state of Vermont seeking a judgment to prevent the state of Vermont from forcing the plant to cease operation on March 21, 2012. On July 18, the Court issued a decision denying a preliminary injunction motion filed by the two units.

Federal law does not forbid individuals from raising safety or reliability concerns,

said Parenteau, nor does it block lawmakers from addressing these concerns in the legislative process. However, the law does forbid nuclear safety regulation by the states. "The NRC will decide if that plant is safe, whether we like it or not." The U.S. Supreme Court ruled on states' power to regulate a nuclear power plant in the 1983 Pacific Gas & Electric v. State Energy Commission case. In its ruling, the court stated clearly that states can shut power plants for non-radiological safety reasons. But that same PG & E case also gives companies grounds to sue if a state enacts a law that blocks a plant. Entergy did not sue Vermont in 2006 over the Legislature gaining the right to vote on the awarding of a CPG. The Court Case is due to start in September.

On June 30, fifteen women, included three women in their nineties (Valerie Mullen, 90; Frances Crowe, 92 and Lea Wood, 94) of the Shut It Down Affinity Group were arrested at the Vermont Yankee nuclear power plant and charged with trespass after advocating for replacing nuclear power with solar power.

Sources: Nuclear Monitor 721, 17 December 2010 / Vtdigger.org, 21 July 2011 / Energyboom.com, 25 July 2011

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FAR FROM “SOLVING GLOBAL WARMING,” N- POWER TOO RISKY IN DESTABILIZED CLIMATE

The nuclear power industry has spent a lot of money on public relations and national advertizing campaigns aimed at convincing the public and decision makers that atomic energy is a solution to the worsening climate crisis. But extreme weather, likely made more frequent and intense by the growing concentration of heat-trapping greenhouse gases in the atmosphere, means that nuclear power is too risky to operate amidst the climate chaos.

(731.6155) Beyond Nuclear - In the U.S., current historic floods on the Missouri River, threatening the Fort Calhoun and Cooper (of the same design as Fukushima Daiichi Units 1 to 4) atomic reactors in Nebraska, have underscored the point. So has a historic wildfire that recently came dangerously close to tens of thousands of 55 gallon (208 liter) barrels of plutonium-contaminated wastes at the Los Alamos nuclear weapons lab in New Mexico.

Fortunately, a record number of tornadoes, some of record size, this spring across the Midwest, South, and Southeast U.S. did not directly strike atomic reactors, although some were forced to shut down as a safety precaution when primary electric grids failed. Previous direct hits by tornadoes at atomic reactors, such as Davis-Besse, Ohio, in June 1998, came close to causing a catastrophic radioactivity release. Similarly, Hurricane Andrew at Turkey Point nuclear power plant near Miami in 1992 required the diversion of diesel fuel supplies from area hospitals in order to keep emergency backup generators running for many days, to operate vital safety and cooling systems.

Given their vulnerable locations, on sea coasts, rivers, the Great Lakes, etc., U.S. atomic reactors grow more risky with the worsening climate crisis. In fact, the 104 operating reactors at 65 sites in 30 states across the U.S. are almost all vulnerable to extreme weather events.

24 operating reactors at 14 sites are located on our sea coasts, vulnerable to hurricanes and storm surges, and eventually, sea level rise. Not included in this count is River Bend nuclear power plant, on the Mississippi River in Louisiana but far from the ocean, which was forced to shut down during Hurricane Katrina in 2005 for safety's sake. Thus, even "inland" reactors are at risk from powerful enough hurricanes. 64

operating reactors at 39 sites are located along rivers, potentially vulnerable to floods. Certain rivers, of course, are more likely to flood than others. A total of 88 reactors at 53 sites are vulnerable to inundation.

Such an inundation, although caused by an earthquake-spawned tsunami, led to the ongoing triple reactor meltdown and high-level radioactive waste pool releases at Fukushima Daiichi. Many U.S. reactors are also at risk of earthquakes, and some, as on the California coast at San Onofre and Diablo Canyon, to tsunamis.

13 operating reactors at 9 sites are located on the U.S. side of the Great Lakes. An additional 20 reactors are located on the Canada side of the Great Lakes in Ontario. Among other things, these reactors are vulnerable to tornadoes. A tornado damaged the Fermi 2 nuclear power plant in Monroe, Michigan in June, 2010, knocking out the primary electric grid. Fortunately, this happened after it had been discovered, just 4 years earlier, that Fermi 2's emergency back-up diesel generators had been inoperable for two decades, from 1986 to 2006. Fermi 2 is the largest General Electric Boiling Water Reactor of the Mark 1 design in the world – a replica of Fukushima Daiichi Units 1 to 4, only significantly bigger, and with more high-level radioactive waste in its storage pool than all four failed Japanese units put together. These Great Lakes reactors are located immediately adjacent to the drinking water supply for 40 million people downstream in the U.S., Canada, and numerous Native American/First Nations, comprising a remarkable 20% of the world's surface fresh water.

In addition to catastrophic risks from extreme weather, the warming, or absence of enough, cooling water could force atomic reactors to power down, or shut down entirely. Dave Kraft of Nuclear Energy Information Service in

Chicago has documented several such occurrences in the U.S. and Europe in a fact sheet entitled “ ‘It's the water, stupid!’ Nuclear power won't work in Global Warming World.”

In the summer of 1988, nearly 100 reactor-days of operations at Commonwealth Edison reactors in Illinois were lost due to severe drought, exceedingly high temperatures, low river volumes and flow rates.

In the summer of 2003, the Western European heat wave that killed 30,000 people also wreaked havoc with atomic reactor operations. Spain shut down its reactors. France and Germany shut some reactors down, but allowed others to continue operating, exceeding design standards and thermal discharge regulations. At Fessenheim in France, local firefighters were called upon to hose down overheating reactor containments. And at Blayais on the Gironde River estuary in France, thermal discharge limits were violated 50 times over.

In the summer of 2006, the twin reactors at Donald C. Cook nuclear power plant in Michigan, were forced to shut down during a severe heat wave. Internal containment building temperatures exceeded the regulatory limit of 120 degrees Fahrenheit (49 degrees Celsius) for over 8 hours, and the temperature could not be reduced. Remarkably, this occurred despite Cook drawing its cooling water from Lake Michigan, one of the single largest bodies of fresh water on the planet.

From August 5-12, 2008, the Tennessee Valley Authority (a federal nuclear utility) lost one-third of its nuclear capacity due to serious drought conditions in the Southeastern U.S. All three reactors at Browns Ferry in Alabama were shut down to prevent overheating the Tennessee River. The Southeast already hosts over two dozen atomic reactors. Construction on four new ones is already underway at Vogtle in Georgia and Summer in South Carolina.

Again in July, 2009, 20 gigawatts-electric of France's total nuclear generating capacity of 63 GW-e was out of service due to reaching thermal discharge limits for French rivers.

Not only are energy efficiency and renewables such as solar power and wind

power ever more cost effective than nuclear power, they are also safer and more reliable in a global warming world. They do not require huge amounts of cooling water, as do atomic reactors. Best of all, they are genuinely clean – representing actual solutions to the climate crisis.

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JAPANESE PRIME MINISTER: "NUCLEAR FREE FUTURE"

"We will aim to bring about a society that can exist without nuclear power," Japanese Prime Minister Naoto Kan said in a television address to the country July 13. The statement was Kan's clearest yet about the appropriate long-term energy goals for a country dealing with the consequences of the worst nuclear crisis in a quarter-century. More than two-thirds (70.3 %) of Japanese support Prime Minister Naoto Kan's call to do away with nuclear power, a media poll showed on July 24, underscoring growing opposition to atomic energy in the wake of the crisis at the Fukushima Daiichi plant.

(731.6156) WISE Amsterdam - It has now been more than four months since the accident began at Fukushima Daiichi and unfortunately no end is yet in sight although much of the major media moved on from Fukushima. But the accident continues, radiation continues to be released (though much lower amounts, of course, than initially), and the risk of new problems remains.

"Japan without nuclear power"

Japanese Prime Minister Naoto Kan's July 13, statement was his clearest yet about the appropriate long-term energy goals for a country dealing with the consequences of the worst nuclear crisis in a quarter-century: "We will aim to bring about a society that can exist without nuclear power." One day before that statement, Kan told lawmakers that Japan must scrap a plan that calls for the country to increase its use of nuclear power to 53 percent by 2030, up from the pre-quake level of roughly 30 percent. And he took a stand against the government's long-peddled slogan about the safety of nuclear power – the "safety myth" that allowed for the construction of 54 reactors over four decades. "Through my experience of the March 11 accident, I came to realize the risk of nuclear energy is too high," Kan said. "It involves technology that cannot be controlled according to our conventional concept of safety."

But Kan's energy plan faces numerous obstacles, from within his own government and from the utility companies that act as regional monopolies. There is also the matter of Kan's own domestic unpopularity and his waning authority to guide the country.

Nuclear plant workers developed cancer despite lower radiation exposure than legal limit.

Of 10 nuclear power plant workers who have developed cancer and received workers' compensation in the past, nine had been exposed to less than 100 millisieverts of radiation, according to a Mainichi Daily News report. The revelation comes amid reports that a number of workers battling the crisis at the Fukushima Daiichi plant were found to have been exposed to more than the emergency limit of 250 millisieverts, which was raised from the previous limit of 100 millisieverts in March. The current guidelines for workers' compensation due to radiation exposure only certify leukemia among various types of cancer. In these cases compensation is granted only when an applicant is exposed to more than 5 millisieverts of radiation a year.

According to Health, Labor and Welfare Ministry (of Japan) statistics, of the 10 nuclear power plant workers, six had leukemia, two multiple myeloma and another two lymphatic malignancy. Only one had been exposed to 129.8 millisieverts but the remaining nine were less than 100 millisieverts, including one who had been exposed to about 5 millisieverts.

Mainichi Daily News, Japan, July 27, 2011

But the fact that public opinion is changing, was also highlighted by the fact that, also on July 13, the Asahi Shimbun, Japan's second-largest paper,

ran a front-page editorial calling for the phase-out of nuclear energy. But the piece also warned against immediate abandonment. "If we go to zero suddenly, we will encounter power shortages, and our lives and economic activities will be hugely affected," the editorial said. "It is more realistic to not try too hard but to steadily decrease the dependency."

Nuclear establishment

But Naoto Kan's dream of creating a society free of nuclear power appears destined to die when his reign as prime minister expires. No politician considered a possible successor is taking up Kan's call to decommission all of Japan's nuclear reactors. In fact, almost all prominent Cabinet ministers and executives of the ruling Democratic Party of Japan who have supported Kan appear reluctant to go along with his nuclear-free idea.

Japan suspend nuclear talks

In what could be an important move, the Japanese government has decided to suspend negotiations with India and four other countries on civil nuclear cooperation following Prime Minister Mr Naoto Kan's call for Japan's eventual exit from atomic power, according to a media report. Any move to proceed with the talks

now "could risk contradicting the Prime Minister's policy," an unnamed government source was quoted as saying by 'Kyodo' news agency.

The report said the government will suspend talks with India, Brazil, South Africa, Turkey and the United Arab Emirates on the sale of Japanese-made nuclear power equipment and technology. The decision concerns negotiations over completing separate nuclear power cooperation agreements with these countries.

The source also indicated the government will not schedule any high-level talks with the five prospective nations on completing nuclear cooperation accords without getting Mr Kan's nod, the report said.

Turkey to cancel talks with Japan?

The Turkish government informed the Japanese government that it will cancel the preferential negotiations with Japan and start talks with other candidate countries on the project to build a nuclear power plant, if Japan does not make clear its intention to continue the negotiations by the end of July, (Japanese) government sources said.

Turkey plans to construct a power plant with four 1.4 million kilowatt-class nuclear reactors in the Black Sea coastal city of Sinop. It aims to start operating the plant around 2020. Toshiba Corp. hopes to win an order to construct the plant with the cooperation of Tokyo Electric Power Co.

The negotiations between Turkey and Japan have been suspended since the nuclear crisis began at TEPCO's Fukushima No. 1 nuclear power plant. Turkey ended negotiations with South Korea last December and gave the Japanese government the preferential negotiation rights. Turkey, which is also an earthquake-prone country, highly valued Japan's quake-resistance technology in awarding the priority rights, according to the sources.

After Kan's "denuclearization declaration" on July 13, it has been increasingly unclear whether Japan will be able to extend government-level support to Turkey, even if Toshiba won the order. Meanwhile, Japan's rivals, especially South Korea, are eager to extend such support.

"Stable cooling"

Tepco says it has achieved "stable cooling" of all of the reactors at the site. This might sound like good news until it is realized that Tepco does not mean the reactors are at cold shutdown. In fact, all 3 reactors with fuel in them remain above the boiling point of 100 degrees Centigrade, meaning that

water continues to boil off and radiation continues to be released. Cold shutdown—bringing the temperatures below 100 degrees—is still not expected before January 2012. What Tepco really means is that it has more or less successfully set up a system for water to be recirculated through the reactors, so that constant water from outside is no longer needed. However, the recirculation system has been plagued with problems from the beginning and continues to not work at desired capacity. That is not the case for the Unit 4 fuel pool, which continues to receive water from outside. Temperature in the pool is said to be below boiling, at 80 degrees Centigrade.

Radioactive beef

The central government is considering buying all beef with levels of radioactive cesium exceeding government standards in an effort to try to address rising consumer concern and falling prices for Japanese beef. It would be the first time the central government has provided direct compensation for food products contaminated by the accident at Fukushima.

However, the current draft plan only envisages paying for beef that has been confirmed as contaminated in random tests. Meat from cows that have not been tested will not be bought. Farmers are demanding that all cows affected by shipment restrictions be bought up by the government to cover large losses from tumbling beef prices due to the radiation scare. The payment of compensation to beef farmers could lead to complaints from other farmers and fishermen of preferential treatment.

The issue of contaminated beef surfaced July 8, when meat from cattle shipped from a farm in Minami-Soma, Fukushima Prefecture, was found to have levels of cesium exceeding government standards. The contamination was caused by feeding the cattle contaminated straw. Investigators are looking into whether cattle in other areas have been similarly affected.

Industry minister Banri Kaieda said that Tepco should shoulder part of the costs of the government's planned purchase.

Iodine-131

But it's not just beef and straw. Very high levels of Cesium-137 and other radioactive elements have been detected in all manners of agricultural products and soils across the region. Of particular note are both the Cesium-137 levels far higher than allowable limits, but also the continued presence of high levels

of Iodine-131. Because of its 8-day half-life, Iodine-131 released during the initial week of the accident, when extremely large amounts of radioactive materials were ejected from all the Fukushima reactors, already has decayed to background. The continued presence of high levels of Iodine-131 is a certain indicator of the radiation releases that continue at Fukushima and will continue for months to come.

State support Tepco

A bill aimed at keeping troubled utility Tepco solvent gained approval from a Japanese parliamentary committee on July 26, with both ruling and opposition party support, paving the way for its passage through both houses of Japan's parliament. The bill would create a state-backed entity to financially support Tepco, which is in desperate need of assistance to cope with the potentially staggering costs of compensating those affected by the nuclear accident at its Fukushima Daiichi plant.

But while approval of the bill may reassure financial markets concerned about Tepco's survival, revisions to the bill to secure its likely passage mean the key issue of who pays what to fund the compensation will be decided later. Japan's two leading domestic rating agencies have already warned that parliament needs to move quickly to avert a Tepco bond rating downgrade that could trigger a major selloff in the utility's bonds, hitting the broader market. Tepco shares have lost 76% since the accident while the yield on the utility's bonds has risen sharply, as has the cost of debt protection.

Sources: Washington Post, 13 July 2011 / The Statesman, 17 July 2011 / Asahi, 19 July 2011 / NIRS update, 19 July 2011 / Asahi, 23 July 2011 / Japan Times, 24 July 2011 / Reuters, 24 July 2011 / Nikkei.com, 26 July / The Yomiuri Shimbun, 27 July 2011

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TAIWAN AFTER FUKUSHIMA

Since the Fukushima disaster, NGOs hosted two major demonstrations, on March 20 and April 30, as well as many ongoing nationwide activities. Two days after the Fukushima disaster, Deputy Chair of the Atomic Energy Council, Taiwan's regulatory body, assured the Legislators that Taiwan's six operating nuclear reactors are as safe as "Buddha sitting comfortably on her lotus platform".

(731.6157) Taiwan Environmental Protection Union - NGOs and some Legislators called for abolishing the construction of the 4th nuclear power plant, and immediate stopping the 6 operating reactors for thorough safety check-ups. Taiwan has three operating nuclear power plants: Chinshan, Kuosheng, and Maanshan, with two reactors each. The fourth plant, Lungmen, two 1300MW ABWR, is under construction.

On March 15, President Ma, of the pronuclear KMT party, said there is no need to change the current nuclear policy. "The existing 6 reactors will keep running till serious incidences emerge. Since no signs of emergency occurs, no need to stop these reactors." "Once real serious incidences occur, reactors will be abandoned immediately to protect the public". President Ma's announcements were criticized as "nonsense and stupidity" by non-governmental organizations. In addition, AEC officials said that radioactivity from Fukushima reaching Taiwan is impossible. Only a few days later they were forced to admit that vegetables in northern Taiwan were found to be contaminated.

One survey conducted by the opposition Democratic Progressive Party, DPP, on March 16, shows 50.6% of the Taiwanese population has little confidence in nuclear plant operation; 61.1%

has little confidence in government's ability of handling the crisis and 76.5% agrees that the construction of the 4th nuclear power plant should temporarily be stopped till reactor safety are warrant. Another survey conducted by the Taiwan Thinktank, on March 17th shows 58% agrees that construction of 4th nuclear power plant should be stopped and should be re-evaluated; 65% worries about nuclear safety; 79% does not know how to evacuate and how to cope with a nuclear accident if it occurs in Taiwan; 56% suspect that radioactive nuclei from Fukushima can travel to Taiwan; and finally 74.6% of people in Taiwan do not accept AEC's analogy that Taiwan's nuclear plants are as safe as Buddha on her lotus seat.

On May 30, maybe concerned about possible influences of the nuclear issue on the Presidential and parliamentary elections next January, the Ministry of Economic Affairs announced "no lifetime extensions (after 40 years' operation) for current reactors" and "no 4th nuclear power plant operation unless safety is guaranteed". Before the Fukushima incident, the Ministry of Economic Affairs sent its energy policy to the Environmental Protection Agency for policy Environmental Impact Assessment. That particular energy policy was formed August 2010, with expansion of nuclear and coal at its core. One

week before the May 30 announcement, the Ministry quietly retracted its energy policy from EPA.

As reported in the Nuclear Monitor 688, May 7, 2009, the Atomic Energy Council revealed that between January and November 2007, state-owned Taipower changed the 4th nuclear plant design in 395 places without applying permission from the Atomic Energy Council, as law requires. Taipower was fined 4 million NT dollars for misconduct (US\$ 139,000 or 100,000 euro). However, additional more than 700 safety related design changes without approval were discovered in January 2011. On March 8, three days before the Fukushima disaster, AEC fined Taipower 15 million NT dollars, and sent the case to the prosecutor for violating "Nuclear Reactor Facilities Regulatory Acts". This is a bold and unprecedented act from the rather weak AEC. At the deadline of this article, July 25, one cannot be sure whether AEC will act as strong in the future, and eventually shut the 4th nuclear power plant, or if AEC is just a dummy testing political winds.

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SPAIN: LARGE ANTI-NUCLEAR CAMPAIGNS AFTER FUKUSHIMA

Fukushima has had a big impact in Spain, mainly in Catalonia, as this country is one of the most nuclearized countries of the world. In 2010, almost 50% of all the generated electricity in Catalonia was nuclear. The main issue is the extension of operational licenses of several reactors

(731.6158) Grup de Científics i Tècnics per un Futur No Nuclear - Despite the lack of serious information about the Fukushima nuclear accident in the main media, a coalition of anti-nuclear Catalan groups just after the Fukushima accident called for a sit-in in front of the Catalan government and City Council main buildings (17 March 2011). Also they succeed in organizing a big march (supported by more than

100 environmental, political, social and solidarity organisations), on Sunday 5 June 2011, the World Environment Day, from the Spanish Government Delegation building in Barcelona to the Endesa main office in the city. The Spanish Socialist Party won the elections with the commitment to establish a timetable to shutdown the nuclear reactors, but at present nothing has been decided and the only nuclear decision has been to

extend the life of the oldest nuclear reactor operating in Spain (Santa Maria de Garoña, GE BWR, similar to Fukushima number 1 unit).

Endesa was the former public utility that was privatized by the conservative government in 1998 and is now owned by Enel. Endesa, as public utility, played a main role in late seventies and early eighties buying shares of many Spa-

nish private utilities engaged in building nuclear power plants that experienced big financial problems. And now Endesa owns 45.3% of all the nuclear power capacity in Spain (Iberdrola 44.9%, GasNatural Fenosa 7.5% and HC 2.1%). The antinuclear Barcelona march was attended by many thousands of people from all ages, showing a 250 square meter banner (15x15m) with a gigantic Smiling Sun logo.

The antinuclear march was a big success because since November 1989, just after the serious accident that Vandellòs I reactor experienced on October of that year, not one antinuclear demonstration had been organized any place in Spain. Only the Barcelona based Group of Scientists and Technicians for a Non Nuclear Future (founded in Barcelona at the end of 1980 and registered as NGO just after the Chernobyl accident) was able to organize an annual event called the Catalan Conference for a Future Without Nuclear Power (since 1992 it was renamed as Catalan Conference for a Sustainable Energy Future Without Nuclear Power). During the last edition of the conference (the 25th) two main energy studies were presented: the SolarCat and the Sos-Tec, the first showing two scenarios on how Catalonia could have a 100% renewable electricity system between 2030 and 2045 and the second exploring how to shutdown the three remaining nuclear reactors operating in Catalonia before 2020. As invited guests, Walt Patterson (author of many books on energy) and

Javier García Brea (former IDAE director and now chairman of Renewables Foundation) were able to give lectures.

To understand the success of the present antinuclear events it is necessary to remember that on occasion of the 20th anniversary of Chernobyl accident (2006) in Barcelona a big antinuclear music festival around Earth Day was organized. In Barcelona, Catalonia Earth Day is organizing since 1996, an annual Earth Fair and the last editions of the Earth Fair were attended by 100.000 people). Also, in 2010, at the same event, a successful demonstration was organized to show the rejection of the proposal of the Spanish Government plans to build a Nuclear Waste Centralised Storage facility. Many thousands of people with antinuclear face-masks, showed the opposition to the project. And a few weeks before the June 5 march, another massive antinuclear event during the Earth Fair was organized and attended by many thousands of people.

After the Fukushima nuclear disaster other antinuclear demonstrations were organised in Madrid (8 May, supported by 27 political, social and environmental organisations) and Bilbao (Basque Country, 23 June, supported by 20 social and environmental organisations).

On July 26, 2010 the Spanish government renewed the operational license of Vandellòs 2 nuclear reactor until 2020. On March 10, 2011 (one day

before Fukushima) it did the same with Cofrentes nuclear reactor, renewing the operational license until 2021. Next October 1, 2011 the operational license of Ascó nuclear plant (with two reactors, Ascó 1 and Ascó 2) will end. Now there is a strong campaign to ask the Spanish government not to renew the Ascó operational license because it is the nuclear plant experiencing almost 50% of all the nuclear irregular events in Spain. Last July 22, 2011 the Catalan Parliament rejected a proposal introduced by 'Solidaritat Catalana per a la Independència' (a coalition of 5 political parties, including the Catalan green party 'Els Verds – Alternativa Verda'), supported by the Socialist Party (PSC), the Republican Party (ERC) and the leftist party (ICV-EUA) asking the Catalan government to address a petition to the Spanish Government in order not to renew the operational license of Ascó, until the nuclear power plant will succeed with the stress tests adopted after the Fukushima nuclear catastrophe. The majority of votes from the Catalan center-right party CiU (ruling at present the Catalan government) with the support of the Spanish rightist party PP rejected the proposal, showing clearly their support for the nuclear industry.

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FLAMANVILLE, OLKILUOTO; MORE PROBLEMS EPR

This so-called “third generation” of nuclear reactors, instigated by the development of the EPR, is proving to be a complete failure. Complex, unfinished designs combined with suppliers who don't hesitate to cut corners, are a recipe for risky and dangerous reactors. Endless delays and billions of euros in extra cost, in turn, are bound to shipwreck the energy policy of a country that bets on nuclear power.

(731.6159) WISE Amsterdam – Governments and investors need to focus on solutions that are delivering safe, renewable energy instead of betting on a risky and dangerous new nuclear reactor. While renewable energy provides most of new electricity generation capacity in Europe as a whole, Finland and France are still making little progress on wind power and other modern renewable energies.

Olkiluoto

The first ever EPR nuclear reactor - currently under construction by French nuclear company Areva at Olkiluoto, Finland - has been hit once again by delays and the discovery of a host of design and construction defects. Following the Fukushima nuclear accident, Areva as well as its Finnish client TVO have kept a low profile to avoid attention concerning the problems of the EPR project. On July 20, it was revealed that the Flamanville EPR at Flamanville,

France, is ridden by similar problems: new delays and cost overruns.

Greenpeace published a new briefing on the EPR project in Finland based on documents from the Finnish Radiation and Nuclear Safety Authority (STUK). Areva recently doubled its claim for economic damages from the Finnish project from 1 billion to 1.9 billion euros. TVO "has considered and found the claim by the Supplier to be without merit. TVO will update its counterclaim

during the arbitration proceedings." The arbitration proceeding may continue for several years and the claimed and counter-claimed amounts may change. Areva's total cost for the project is approaching double the contracted price of 3 billion euros. The companies have last acknowledged a new construction delay to the project in June 2010, when TVO said construction would not be completed before the end of 2012, delaying electricity production until the second half of 2013. The plant was originally meant to go online first half of 2009. At the same time, Areva announced a writedown of 367 million euros, bringing the total cost overrun to 2.6 billion euros, on top of a contracted price of 3 billion. The new problems will most likely imply that the cost and lead time of the project have more than doubled.

The latest annual and quarterly reports by Finnish nuclear regulator (STUK) reveal a long list of alarming issues with the EPR:

* There are new design issues, and the finalization of designs and analyses are lagging behind construction. If the design does not pass the pending analyses, expensive and time-consuming modifications may be required.

* Major lapses in quality assurance and safety control, including backup diesels, emergency cooling systems, electric cabling, radioactivity-containing pools, polar crane, reactor building support structures.

* Continuing lack of safety culture: quality requirements not being communicated in the supply chain; carrying out work without required plans and tests; absence of effective supervision.

* Significant new delays have accumulated; timelines for construction, installation and design approvals have not been met.

Flamanville 3

On July 20, it was revealed that the Flamanville EPR in France is ridden by similar problems.

When the French government published the decree giving the go-ahead for EDF to construct the 1650 MW EPR at its Flamanville site in Normandy on April 11, 2007 the unit was scheduled to begin operating in 2012. Costs were estimated then at 3.3 billion euro; when the decision was taken to built an EPR in 2004 costs were estimated at 3 billion euro.

Now, 4 years later, on July 20, 2011 Electricite de France (EDF) announced that the Flamanville 3 reactor will produce its first kWh only in 2016. EDF announced also on July 20, that the cost of construction amounted to 6 billion euros, (almost) double the price originally announced. To justify this additional cost, EDF argues that this reactor is the first of its kind. They forget too quickly that Flamanville 3 was preceded by the EPR Olkiluoto.

EDF is architect engineer of the project. While Areva is contributing the nuclear

steam supply system, Bouyges Construction is leading the civil engineering consortium which included its subsidiaries Bouyges Travaux Publics and Quille, as well as Baudin-Châteauneuf. According to EDF, civil construction is 80% complete, said a statement, and "a start has been made on assembling piping and electrical equipment."

UK: Revised schedule later this year

EDF Energy, the UK subsidiary, has been planning to announce a revised schedule for its first UK EPR towards the end of this year when it can take account of the final report from chief regulator concerning the Fukushima accident. Company CEO Vincent de Rivaz had previously aimed for the end of 2017 at the time to begin commercial operation, with this already having been revised in statements to 2018.

Sources: AFP, 21 October 2004 / World Nuclear News, 11 April 2007 / EDF Press release, 20 July 2011/ Greenpeace, Press release, 21 July 2011 / Greenpeace Briefing: New problems at Olkiluoto, 21 July 2011 / World Nuclear News, 21 July 2011

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LEUKEMIA INCREASES NEAR NUCLEAR POWER STATIONS

The main aim of the 14th COMARE Report was to undertake a further review of the incidence of childhood leukemia near most UK nuclear power plants (NPPs). In 2008, a previous study(i) commissioned by the Department of Health had found a 36% increase in acute childhood leukemia's between 1969 and 2004 within 5 km of 13 of the 14 UK nuclear power stations. The observed increase was considered not to be statistically significant as there was a >5% probability that it could have arisen by chance.

(731. 6160) Ian Fairlie - In November 2009, the Department of Health requested COMARE (Medical Aspects of Radiation in the Environment) to extend the 2008 study to include more recent data in order to increase the statistical strength of its findings. This is reflected in COMARE's Press Release which states that the new study examines data "...for the extended period..." However the COMARE Report actually does not do this: it uses the same 1969 to 2004 time period as the 2008 study.

The Report states (para 6.6) "...any significant amount of later information would have entailed a delay in carrying out the analysis. Later years are also becoming increasingly difficult to analyze satisfactorily because of the ways in which recent census data are made available."

This excuse is not transparent and leaves several questions unanswered. One question is - what is therefore the difference between the 2008 study and

the present one? The apparent difference is that the COMARE study now includes non-Hodgkins lymphomas (NHL), chronic myeloproliferic diseases, and unspecified leukemia's - as well as the acute leukemia's examined in 2008. These are strange inclusions as there are no actual cases of these extra diseases in the 5 km circles near British NPPs in the study period, and these disease categories were used in neither the 2008 Bithell nor the KiKK study which were supposed to be replicated.

The Report finds a 22% increase in childhood acute leukaemia + non-Hodgkins lymphoma (NHL) + chronic myeloproliferic disease + unspecified leukaemia. Therefore the net result of adding the new disease categories is to reduce the apparent increase in leukemia's/ lymphomas near NPPs from 36% in the 2008 study to 22%. The Report states (para 6.40) that its study had a "negative finding". But in statistics, it is incorrect to make negative conclusions merely because a study lacks statistical significance.

Evidence on leukemia's near NPPs

The COMARE Report refutes the clear pattern of epidemiological evidence across the world indicating increased leukemia risks near NPPs. In a study(ii) not cited by COMARE, Laurier and Bard examined the literature on childhood leukemia's near NPPs world-wide. They listed a surprising total of 50 studies (29 ecological, 7 case-control and 14 multi-site studies) the majority of which revealed small increases in childhood leukemia near NPPs although most were not statistically significant. In a later study, Laurier et al(iii) reviewed epidemiological studies on childhood leukemia at 198 nuclear sites in 10 countries, including 25 major multi-site studies. They found that increased risks of childhood leukemia near nuclear installations were a recurrent issue. The authors, employees of the French Government's Institut de Radioprotection et Sûreté Nucléaire (IRSN), confirmed that clusters of childhood leukemia cases existed locally near NPPs but they declined to generalize their findings.

In fact, the 2008 Laurier et al study, taken together with Laurier and Bard's 1999 study, indicate over 60 studies world-wide on increased childhood cancers near nuclear facilities, most of them finding cancer increases. It is hard to think of any other toxicity studies, eg with chemicals or biological agents, which remotely approach this number.

The findings of all these studies have been discussed by Fairlie and

Körblein(iv) who concluded that "the copious evidence indicating increased leukemia rates near nuclear facilities, specifically in young children, is quite convincing, at least to independent ob-

Emails reveal why COMARE report was delayed.

The publication of the long-awaited and fiercely-disputed COMARE report on the radiation risks of nuclear power stations was accelerated but then delayed at the insistence of the government's Department for Energy and Climate Change (DECC), internal emails reveal. The Department of Health (DoH) released 79 pages of emails about the publication of the COMARE report in response to a request under freedom of information legislation.

DECC initially insisted that the DoH publish the report as soon as possible to help combat a court challenge on nuclear power. The government was being sued by an anti-nuclear activist for failing to take account of radiation risks. On 10 March 2011 Peter McDonald, from DECC's Office for Nuclear Development emailed health officials urging publication. "In the interests of transparency, the best possible thing is that the report is published as soon as possible and that, if anything, greater urgency is needed precisely because of the pending court action."

But the day after his email, an earthquake and tsunami in Japan knocked out the Fukushima nuclear plants and their back-up safety systems, triggering the world's worst nuclear accident since Chernobyl 25 years ago. As a result, DECC changed its tune. In an email on 14 March, a DoH official said a submission to ministers to publish the report on 21 March had been withdrawn. "DECC have asked us to delay the publication of the COMARE report for a while given the current nuclear issues in Japan due to the earthquake," wrote the official, whose name has been blacked out. "We ask that DECC keep us informed as to the situation and when it might be appropriate to publish the report."

Ten days later, on 24 March, DECC changed its mind again. "DECC have just rang and are now content for us to seek permission to publish," wrote a DoH official. But then the problem became intruding on the election campaign that had just begun in Scotland, offending the civil service tradition of not interfering with elections. In the end, after seeking permission from the Prime Minister, David Cameron, the report was published on 6 May, the day after the Scottish election.

www.Robedwards.com, 4 July 2011

servers." The COMARE Report comes to the opposite conclusion and fails to discuss the preponderance of the evidence of the above-stated studies, ie the finding of increased leukemia's near NPPs.

Most important, is the German KiKK study(v, vi) (Kinderkrebs in der Umgebung von KernKraftwerken = Childhood Cancer in the Vicinity of Nuclear Power Plants) which found a 120% increase in leukemia's and a 60% increase in solid cancers among children under 5 years old living within 5 km of all German nuclear power plants. The KiKK report is significant because it is a large well-conducted study; because it is scientifically rigorous; because its evidence is particularly strong; and because the German Government, which commissioned the study, has confirmed its findings. The COMARE Report gives a number of reasons for refusing to acknowledge the KiKK study. These reasons are disingenuous and unconvincing.

The COMARE Report chooses to downplay the KiKK study, but it simply cannot invalidate the more sophisticated and rigorous KiKK study, as it attempts to do. First, the KiKK study found statistically significant cancer increases. Second, the KiKK study determined precise distances between the homes of cancer cases and NPPs to within 25 meters. In contrast, the COMARE study measured the distances between NPPs and the population centroids of irregularly-shaped electoral wards.

Finally KiKK is a case-control study, that is, it examined 593 leukemic children together with 1,766 controls. On the other hand, the COMARE study used geographical averages rather than parameters characterizing individual cases and controls. Such studies are termed 'geographical' or 'ecological' and they are much less reliable than case-control studies. Policy makers who should be guided by the best available scientific evidence should rely on the better KiKK study rather than the COMARE study.

Exclusion of Calder Hall reactors

Only 13 of the 14 UK nuclear power plants were used in COMARE's leukemia study. The Report states (para 6.12) that the former Calder Hall nuclear power station at Sellafield was excluded from its study. This raises the question as to why. This is an important matter

because in the 1980s and 1990s several epidemiology studies revealed relatively large numbers of excess leukemia's (> 7) at Seascale a small village less than 5 km from Sellafield. If these had been included, the Report acknowledges (para 6.13) "...the result would have yielded a higher estimate of risk..."

The COMARE Report (para 6.12) gives the following reasons for the exclusion (a) "The observation of an excess of childhood leukaemia near Sellafield was the 'hypothesis-generating' observation and good scientific practice proceeds by attempting to test hypotheses on independent sets of data.

(b) Power generation has always been an incidental part of the activities on the Sellafield site, which have included nuclear operations (eg reprocessing) that release considerably more radioactivity into the environment than Calder Hall. (c) The well-known excess of childhood leukaemia cases in the village of Seascale adjacent to the Sellafield site would have an undue influence on the overall results, and distort the findings for the group of NPPs."

These reasons do not stand scrutiny. As regards (a), the purpose of the COMARE study was to ascertain the number of increased leukemia's near all UK nuclear facilities, not to test a hypothesis. The phenomenon of increased leukemia's near NPPs had already been convincingly shown by KIKK and many other studies: scientifically speaking, there was little reason to have to test any such "hypothesis" again.

Reasons (b) and (c) are largely the same. Reason (b) contains an interesting admission that the release of radioactivity into the environment may be a causative factor for the increased leukemia's. However its attempt to divorce reprocessing from nuclear power is disingenuous: most UK nuclear power generation would be impossible without a means for dealing with spent nuclear fuel - the large majority of which is still reprocessed. Reprocessing is therefore an integral part of nuclear power in Britain and its radioactive discharges should logically be included in any reckoning of its health effects. From the point of view of the health of nearby citizens, it does not matter whether the radiation emanates from a reprocessing plant or from nuclear reactors.

This problem could have been addressed by presenting the data with and without Calder Hall: in other words, by widening the study to include all nuclear

installations not just NPPs. Indeed this was indicated by the title of the Bithell et al (2008) study "Childhood Leukemia near British Nuclear Installations". Reason (b) states that reprocessing releases considerably more radioactivity than NPPs: this is true for sea discharges but not necessarily for air emissions which are responsible for the majority of the collective dose to local people. Annual air emissions for some nuclides (especially C-14) from the four Calder Hall reactors could be of similar magnitudes to those from reprocessing. For example, using data available to the author, C-14 releases from Calder Hall in 1995 were 1.4 TBq(vii) compared with 2.62 TBq(viii) for all Sellafield facilities (including Calder Hall) in 1998.

20. Para 6.13 states "... had the data from this site been included - the results would certainly have yielded a higher estimate of risk, but it would have been entirely unclear what implications this had for purpose-built power-generating plants." But surely COMARE was established to concern itself primarily with the health of people living near NPPs rather than the need to construct purpose-built power-generating plants?

Resurrection of discredited reason for leukaemia increases

The new Report states (para 1.3) "There is growing epidemiological evidence that childhood leukaemia is linked to infections...either a rare response to a common infection...or a rare response to general exposure to infectious agents...however the biological mechanism underlying these hypotheses remain the subject of considerable scientific debate."

No such agent has been remotely identified, and the source, pathway and receptor for any such infectious agent are unknown. This myth is periodically recycled but it has been comprehensively criticized(ix, x) in the past. The resurrection of the evidence-free notion of an infectious agent being responsible for the increased leukemia's is an embarrassment, and will act to discredit UK science in other countries.

(i) Bithell JT, Keegan TJ, Kroll ME, Murphy MFG and Vincent TJ. 2008. Childhood leukaemia near British Nuclear Installations: Methodological Issues and Recent Results. Radiation Protection Dosimetry. vol 45:1-7.

(ii) Laurier D, Bard D (1999) Epidemiologic studies of leukaemia among persons under 25 years of age li-

ving near nuclear sites. Epidemiol Rev.1999;21(2):188-206.

(iii) Laurier D, Jacob S, Bernier MO, Leuraud K, Metz C, Samson E, Laloi P. Epidemiological studies of leukaemia in children and young adults around nuclear facilities: a critical review. Radiat Prot Dosimetry. (2008) 132(2):182-90.

(iv) Fairlie I and Körblein A. A Review of epidemiology studies of childhood leukaemia near nuclear facilities: commentary on Laurier et al. Radiat Prot Dosimetry. 2010 Feb;138(2):194-5; author reply 195-7.

(v) Kaatsch P, Spix C, Schulze-Rath R, Schmiedel S, Blettner M. leukaemias in young children living in the vicinity of German NPPs. Int J Cancer. 2008;122:721-726.

(vi) Spix C, Schmiedel S, Kaatsch P, Schulze-Rath R, Blettner M. Case-control study on childhood cancer in the vicinity of nuclear power plants in Germany 1980-2003. Eur J Cancer. 2008;44:275-284.

(vii) BNFL Annual Report on Radioactive Discharges and Monitoring of the Environment 1995.

(viii) Radioactivity in Food and the Environment (RIFE 4) MAFF 1999.

(ix) Russell Jones R (1993) Infective cause of childhood leukaemia. Chapter in: Childhood cancer and nuclear installations. edited by Valerie Beral, Eve Roman and Martin Bobrow. BMJ Publication Group: 1993. London.

(x) Hewitt H. 1994. The Gardner hypothesis: old infective theory discredited. BMJ Jan 1;308 (6920):60.

Dr Fairlie is an independent consultant on radiation in the environment. He was a member of CERRIE - the independent government 'Committee Examining Radiation Risks of Internal Emitters'. He expresses his thanks to Dr Alfred Körblein for his help, particularly on statistical tests.

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Philippines may rechannel its nuclear budget. The Philippines government is considering rechanneling the US\$100 million budget allotted to its nuclear energy development programme in the light of the Fukushima disaster. "Since the budget has been approved, the Department of Energy is currently studying what to do next. Whether we push through or delay or use the budget for more urgent matters. We are in discussion internally," Energy undersecretary Jay Layug has been quoted as saying. He noted that at this stage the country doesn't have any plans for nuclear other than to study it as an option. At the moment, he said, the DoE would be focusing on renewable energy development. "Renewable energy is the priority right now and not nuclear, we're looking at additional capacities through coal and natural gas plants," he said.

Nuclear Engineering International, News 22 July 2011

Chinese experimental fast reactor connected to grid. On July 21, exactly one year after achieving first criticality, the head of China National Nuclear Corporation (CNNC), declared that the Chinese Experimental Fast Reactor's (CEFR's) had successfully achieved grid connection. The sodium-cooled, pool-type fast reactor has been constructed with some Russian assistance at the China Institute of Atomic Energy (CIAE), near Beijing, which undertakes fundamental research on nuclear science and technology. The reactor has a thermal capacity of 65 MW and can produce 20 MW in electrical power. The CEFR was built by Russia's OKBM Afrikanov in collaboration with OKB Gidropress, NIKIET and Kurchatov Institute. The unit was connected to the grid at 40% capacity.

Beyond the pilot plant, China once planned a 600 MWe commercial scale version by 2020 and a 1500 MWe version in 2030 but these ambitious ideas have been overtaken by the import of ready-developed Russian designs. In October 2009, an agreement was signed by CIAE and China Nuclear Energy Industry Corporation (CNEIC) with AtomStroyExport to start pre-project and design works for a commercial nuclear power plant with two BN-800 reactors with construction to start in August 2011, probably at a coastal site (well, if they don't know that by now, the chance of starting constructing next month –August- is not that high). In April 2010, a joint venture company was established for the construction of China's first commercial-scale fast neutron reactor, near the inland city of Sanming in Fujian province. The joint venture - Sanming Nuclear Power Co Ltd - was established by CNNC, Fujian Investment and Development Corp and the municipal government of Sanming city. CNNC holds a majority stake in the venture.

World Nuclear News, 21 July 2011

U.S.–India: quarrel on liability law. U.S. Secretary of State Hillary Clinton recommended that India "engage" with the International Atomic Energy Agency (IAEA) to ensure the nation's civilian atomic liability law "fully conforms" with international accords, The Hindu newspaper reported July 19. Indian government sources said they would reject any hint that the domestic rule must be modified on the recommendation of the IAEA. The Vienna, Austria-based organization does not have the authority to make such recommendations, they said. India holds that its nuclear liability regulations are in compliance with the Convention on Supplementary Compensation for Nuclear Damage, though the United States contends the law allows a scope of actions that the convention does not.

New Delhi's law limits nuclear reactor operator financial culpability following an atomic accident to roughly US\$320 million and allows lawsuits against suppliers of nuclear materials, technology and services. Officials in New Delhi insist the international convention cannot prohibit Indian courts from permitting private lawsuits to be filed by individuals injured in a nuclear incident. The liability law has led a number of U.S. nuclear firms to reconsider their initial enthusiasm for engaging in atomic commerce with energy-hungry India following the signing of a 2008 agreement between Washington and New Delhi. The Indian government wants to see its liability law enacted before the end of 2011.

Global Security Newswire, 20 July 2011

Canada, Saskatchewan: 820 km walk to ban nuclear waste storage. Native / First Nations people in the province of Saskatchewan, Canada, one of the big uranium mining areas of the world, are organizing a 820-km-march from the small Northern community of Pinehouse to the capital of the province, Regina, beginning on July 27, 2011.

They are, besides raising awareness about the issue of nuclear waste and its dangers, collecting signatures for a petition to the Provincial Government to ban nuclear waste and its transportation in the province. This petition can only be signed by Saskatchewan residents (thus, it is not attached).

The First Nations and Metis / Native People are working together with environmentalist groups etc. from Southern Saskatchewan, i.e. Coalition for a Clean Green Saskatchewan; there, you can find all details and documents re: the March, the petition etc.: www.cleangreensask.ca

Contact: Committee for Future Generations, P.O. Box 155, Beauval, Saskatchewan, S0M 0G0 Canada

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WISE/NIRS NUCLEAR MONITOR

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The WISE/NIRS Nuclear Monitor publishes international information in English 20 times a year. A Spanish translation of this newsletter is available on the WISE Amsterdam website (www.antenna.nl/wise/esp). A Russian version is published by WISE Russia and a Ukrainian version is published by WISE Ukraine. The WISE/NIRS Nuclear Monitor can be obtained both on paper and in an email version (pdf format). Old issues are (after two months) available through the WISE Amsterdam homepage: www.antenna.nl/wise.

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