

NUCLEAR MONITOR

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MONITORED THIS ISSUE:

ALLIANCE PUTS MISSOURI EPR ON HOLD

On April 23-the day after Earth Day-AmerenUE, Missouri's largest utility, announced that they were abandoning their pursuit of legislation to facilitate consumer financing of Callaway 2, a proposed 1,600 MW, Areva EPR. While they have not as yet withdrawn their application pending before the Nuclear Regulatory Commission, their CEO, Thomas Voss, stated at a news conference: "AmerenUE is suspending its efforts to build a nuclear power plant in Missouri."

(688.5948) Missourians for Safe Energy

- It wasn't supposed to turn out like this. Ameren had greased the skids with more than US\$135,000 (Euro 100,000) in political contributions in the months leading up to the 2008 elections, and heavily lobbied the Republican-dominated legislature prior to the January introduction of their Construction Work in Progress (CWIP) bills (SB 228 & HB 554). CWIP-which requires consumers to underwrite new construction by paying carrying costs on plants being built-has been prohibited in Missouri since 1976. Voters that year outlawed CWIP in an initiative election by a nearly two-to-one margin. This was one of several factors that gave the

legislature pause when asked to reverse the CWIP ban.

Ameren's bills contained more than a repeal of the No-CWIP statute. Described by one consumer advocate as "CWIP on steroids," the bills represented a veritable utility wish-list, including the prohibition of judicial review, the locking in of utility expenditures through rushed prudence reviews, and the requirement that ratepayers pay 100 percent of funds expended in the event of a plant cancellation.

Ameren had applied to the NRC for a COL (Combined License, to Construct and Operate) for Callaway 2 in July of

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IN BRIEF 7

Latest: STUK threatens to stop Olkiluoto construction.

The Finnish Nuclear and Radiation Safety Authority STUK has demanded that the builder of the nuclear reactor, the French company Areva, corrects faults with the 'automation' that guides the plant. The 'automation' is most likely the control-command system, which includes everything linked to start-up, operation and shut-down of the plant.

STUK says that the construction of the EPR, has not proceeded according to official requirements: the design of the automation does not meet the basic principles required for nuclear safety, and on this basis STUK does not see any possibilities to approve the automation for installation at Olkiluoto.

In a letter to Areva, made public on May 5 by a current affair program on Finnish YLE tv, STUK warns Areva that the building site could be shut down if the automation is not fixed and approved; "the attitude or lack of professional knowledge of certain individuals who represented the organization in question at meetings of experts, prevent progress in solving the concerns", states a letter addressed to the director-general of Areva.

The construction of Olkiluoto, the first EPR, started in February 2005. It is becoming a real burden for Areva: expected costs have been skyrocketed to 5.4 billion Euro, and start-up date has been delayed 'until 2012', more than 3 years after scheduled date.

YLE TV (news in English) website, 6 May 2009

2008. While they claimed they'd not yet made a firm decision to build the new reactor, by the beginning of 2009 they had already spent more than U\$60 million (Euro 45 million) on the project, including ordering components and preparing their license application. They also geared up an ambitious PR effort, advertising Callaway 2 as the answer to Missouri's economic woes, and billing it as "the largest construction project in Missouri's history." Ameren promised thousands of good jobs and enlisted the support of the building trades unions for whom the new nuke represented the prospect of lots of jobs on one site.

Influential politicians in both parties also came out in favor of a Callaway 2. So, by the beginning of the session, many observers expected the CWIP bills to sail through both chambers. What they didn't foresee was opposition coming from more than just the usual suspects.

The Opposition Organizes

Anti-nuclear and environmental groups, including Missouri Coalition for the Environment, Missouri Sierra Club, Missouri Votes Conservation and Missourians for Safe Energy came together as early as August 2008 to form a coalition with any other groups interested in opposing CWIP. Immediately jumping on board were consumer groups like AARP, the Consumers Council of Missouri and the Missouri Association for Social Welfare. Also lending significant support to the effort was the Office of Public Counsel, the state agency charged with representing consumer interests. Out of this initial coalition building came a loose-knit alliance, Missourians for Fair Electric Rates (MoFER), a website, www.nocwip.org and an activist listserv to exchange information.

Another key component of the anti-CWIP alliance was Ameren's large industrial customers, including Noranda

Aluminum and Missouri Industrial Energy Consumers, an association that includes Anheuser Busch, Boeing, Monsanto, Ford, GM, ConAgra and others. While these large corporations were not eager to enter a formal alliance with the environmental community, they maintained communications and worked in tandem with Missourians for Fair Electric Rates. As the session progressed, these companies created a new entity, the Fair Electricity Rate Action Fund (FERAF) (see: www.fairenergyrates.org),

Minnesota House upholds moratorium on new build.

A move to open the U.S. state of Minnesota to future nuclear power plants fell short on April 30, in the House of Representatives. The vote was 72-60 against undoing a 15-year-old moratorium on the construction of new nuclear facilities. A 1994 statute prevents the Public Utilities Commission from authorizing construction of new nuclear facilities. The state already has two nuclear plants, near Monticello and Red Wing. The action showed divisions within the DFL (Democratic Farmer-Labor-Party) majority, with Democrats voting on both sides of the issue and most

Republicans supporting the change. It came just four weeks after an April 2, surprise Senate vote (42-24) to scrap the nuclear moratorium, a position shared by Republican Gov. Tim Pawlenty. The House vote isn't the final word on the issue. It could still come up as a House-Senate conference committee works on a final energy policy bill, although the House vote shows it will be difficult to pass a change in the policy. Minnesota aims to get a quarter of its energy from renewable sources by 2025 or even sooner. **AP, 30 April 2009 / www.clearwateraction.org**

and directed tens of thousands of dollars into a multimedia effort to defeat CWIP. Their resources and political clout were a levelizer, making this less a David and Goliath struggle.

MoFER organized an early February CWIP Truth Tour, bringing former NRC Commissioner and former chair of two state public utility commissions, Peter Bradford, to Missouri to speak in St. Louis, Jefferson City, Columbia and Kansas City. Bradford met with editorial boards, legislators and key policy advisors to Missouri Governor Jay Nixon. MoFER also mobilized a grassroots lobby campaign, encouraged members to make calls, write their legislators and joined in a lobby day at the Capitol in late February.

Before the Committees

When the bills came before the committees in mid-February, there were

lengthy, contentious hearings in both houses, with strong opposition especially in the Senate. While the committees debated, Gov. Jay Nixon, a newly inaugurated Democrat, came out in opposition to CWIP, at least as proposed. Nixon simultaneously claimed to be for the Callaway plant, but opposed to having ratepayers begin paying for it until two conditions were met, that Ameren commit to building Callaway 2, and that the NRC authorize construction. Nixon essentially kicked the ball down the field, saying in effect that CWIP today is premature.

Ameren's allies got their bill voted out of the House Utilities Committee by a nearly unanimous vote. But it was clear by late February that getting this passed in the Senate was not going to be a cake walk. A mid-March legislative recess provided further opportunities for lobbying members.

And then the industrial users really turned up the heat. During the last week of March they launched a TV advertising blitz across the state. The message

from these ads, and from the robo-calls that targeted districts of key legislators, was "Ameren Customers Face a 40% Rate Hike." The drama peaked on Saturday, March 28, when Ameren went into Federal court in an attempt to quash the ads. They asked for an emergency temporary restraining order to prevent the ads from airing that day on the Elite Eight NCAA basketball playoffs, in which Missouri was competing. The court, however, rejected Ameren's tenuous claim that the ads were confusing viewers who mistook them for Ameren's ads.

Two days later, on March 30, FERAF announced the results of a statewide poll showing 82 percent of Missourians opposed to CWIP (62 percent strongly opposed). Meanwhile MoFER held a news conference the same day and made it clear that if the legislature overturned this voter-enacted law, opponents would petition to bring the

issue back for another vote. The next day, a divided Senate Commerce Committee passed a substitute version of SB 228, including some marginal changes, but giving Ameren most everything they wanted.

Filibuster, Failure & Future

By this point, however, CWIP was the most controversial, and the most media-covered issue facing the legislature. And anti-CWIP momentum was growing. When the bill was brought before the full Senate on April 7, it faced a filibuster. Senate leaders broke off debate after midnight and called upon the parties to negotiate a compromise. Two weeks later, however, it was clear that no compromise was forthcoming and Ameren pulled the plug on the legislation.

While Ameren has announced that it is "suspending its efforts to build a nuclear power plant in Missouri," this is not at all certain. As noted, they have not pulled their NRC application and in papers filed with the Commission on May 1 the company challenged a grassroots intervention brought against the reactor and argued that the NRC should proceed reviewing the application but should indefinitely delay financial qualifications issues raised by the interveners.

There is other evidence that Ameren is

simply biding its time. Scott Bond, Ameren's Manager for Nuclear Development, told *USA Today* (March 30, 2009), "Ameren wants to see if the first plants are successful. That's why the utility didn't want to be in that first wave of plants."

This directly contradicts Ameren's position right up until their April 23 announcement. They'd always maintained that this legislation was needed this year to help Ameren compete for federal loan guarantees.

Clearly, Ameren has had to rethink its timeline for starting construction of Callaway 2, if for no other reason than the lack of load growth to justify adding a 1,600 MW plant. Ameren had previously maintained that they intended to complete the new EPR in the 2018-2020 timeframe, and that the plant was needed to meet their projected growth in demand.

More recently, however, they've indicated that their intent is to seek partnerships with other Missouri utilities. They apparently intend to use only 900 MW of the plant's output and to sell the other 700 MW to other players. They have also indicated that their timeline has been pushed back such that construction would start no sooner than 2015 or 2016.

By mobilizing opposition to a clearly

unfair rate mechanism, activists have built alliances and bought some time. While Callaway 2 is not moving forward at the moment, opponents are far from placing the final nails in its coffin.

To ensure that Callaway is actually canceled, sustainable energy advocates will need to push hard for serious commitments to energy efficiency and renewables. In the November 2008 election, Missouri adopted a renewable energy standard (RES) by a two-to-one margin. Missourians want clean energy. The utilities, however, are likely to drag their feet. An immediate task is to make sure that the RES is implemented.

Beyond this, Missouri, which is ranked 45th among the 50 states in energy efficiency, will need to take advantage of the enormous opportunities to save energy while creating jobs and economic development throughout the state. The defeat of CWIP has opened a window of opportunity. If the forces that defeated CWIP can now move Missouri to embrace a sustainable energy agenda, the nuclear revival will truly be eclipsed.

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KK-7: TO RESTART OR NOT TO RESTART?

It is now almost 22 months since the Kashiwazaki-Kariwa nuclear power plant was struck by the Chuetsu-oki Earthquake. The Japanese government and Tokyo Electric Power Company want to restart Unit 7. But currently, debate over three serious problems has not been resolved, one of them being the irregular movement of reactor and turbine buildings. Will science be sacrificed for the sake of national policy?

(688.5949) CNIC - Of the seven reactors at the Kashiwazaki-Kariwa Nuclear Power Plant (KK), all of which have been shut down since the Chuetsu-Oki Earthquake in July 2007, Unit 7 (ABWR, 1356 MW) is said to have suffered least damage. On February 18 the Nuclear Safety Commission (located within the Cabinet Office) approved the restart of this reactor. The following day Tokyo Electric Power Company (TEPCO) applied to Kashiwazaki City, Kariwa Village and Niigata Prefecture for permission to restart the reactor. It

appeared that it wanted all the necessary approvals in place by March 31, the end of the fiscal year.

However, things are not going as TEPCO planned. A fire in Unit 1 on March 5 increased the concerns of the local residents. This is the eighth fire since TEPCO began work in preparation for restart. The cause on this occasion was that workers had not received training about the danger of inflammable vapor in the area. Residents are very critical of TEPCO. They say that TEPCO's claim that it

places top priority on safety is an empty slogan and that it is not qualified to operate nuclear reactors. On March 11 Niigata Governor, Hirohiko Izumida, said that he would not give his approval for restart of KK Unit 7 until the appropriateness of TEPCO's plan to revise its fire prevention system is accepted. He indicated that he did not think public understanding for restart had been obtained. Kashiwazaki Mayor, Hiroshi Aida, and Kariwa Mayor, Hiroo Shinada expressed similar sentiments.

2. Jumping the gun

On March 8 Niigata Prefecture's technical committee on safety control of nuclear power plants held its third meeting since the Chuetsu Oki Earthquake. It agreed that a chairman's opinion supporting restart should be presented at the next meeting, scheduled for March 18. However, the March 8 meeting was sadly lacking in scientific and technical debate and failed to answer scientifically based questions raised by committee members opposed to restarting KK-7. The reason for the unscientific nature of the discussion was that it was based on a sloppy summary of issues debated in two technical subcommittees, when the deliberations of these subcommittees have not even been concluded.

3. Unresolved problems

At this stage, debate over three serious problems has not been resolved.

(1) KK's seismic safety

TEPCO, the Nuclear and Industrial Safety Agency (NISA) and the Nuclear Safety Commission (NSC) argue that it is sufficient to set the magnitude of the design-basis earthquake at M7.0. NISA and NSC approved restart of Unit 7 on this basis. (By comparison, the Chuetsu-Oki Earthquake was M6.8 on the Japanese scale.) However, some scientists have said that this is inadequate. They believe a M7.5 earthquake should be chosen. Although they have provided clear scientific evidence, their arguments have been ignored.

The issue relates to questions about the seismic fault plane that caused the Chuetsu-Oki Earthquake and the form of the marine terrace running from Kashiwazaki to Niigata. The critics claim that the F-B fault was not the source of the Chuetsu-Oki Earthquake. They say the source was the much longer Eastern Boundary Fault of Sado Basin. Historically, this fault has moved repeatedly and it has had a fundamental influence on the form of the marine terrace in the region. There is no scientific basis for refuting this argument.

The basic earthquake ground motion was set at 2,300 Gal for Units 1~4 and 1,209 Gal for Units 5~7 on the basis of a M7.0 earthquake, but these levels are

clearly inadequate.

(2) Irregular movement of reactor and turbine buildings

The ground level has been measured on three occasions since the earthquake, but each time the direction and size of the inclination of the buildings was different. This shows that the plant was not built on firm ground. The fact is that the ground beneath the

Building on tofu?

An issue relevant to the work of both sub-committees is how to interpret the fact that the reactor and turbine buildings have continued to move since the earthquake. TEPCO has measured the elevation of the buildings on three occasions since the earthquake - immediately after the earthquake, in February 2008 and again in August 2008. There are suspicions that the continued movement could be because the bedrock has broken up, or for some other similar cause. Alternatively, it could be related to the Madogasaka Fault, which NSC claims is not active.

During the December 23 meeting in Kariwa Village hosted by the Niigata Prefecture sub-committees, the chair of the subcommittee into equipment integrity and earthquake resistance and safety, Haruo Yamazaki, responded to a question with an example of a nuclear power plant floating on a cup of starch. When construction of the Kashiwazaki-Kariwa Nuclear Power Plant was first planned, people said it was like building a nuclear power plant on tofu. Now it looks like the ground on which the plant is built is no more solid than a cup of starch.

Nuke Info Tokyo 128, Jan/Febr. 2009

buildings is moving [see box].

The seismic safety guidelines in force when the plant was constructed (the old guidelines) required that nuclear power plants be constructed on firm ground. The construction of KK violated these guidelines. The excuse is given that the inclination is within the permitted limits and will not interfere with insertion of the control rods, but this avoids the real issue. Can the plant withstand the next earthquake? Why does the ground continue to move in

this irregular way? As long as scientific answers to these questions are not found, residents will not have confidence in the safety of the plant. At the beginning of March a research team from Niigata University carried out a second boring near the plant. Results have just come in and there is a difference of 20 meters between the Niigata University team's measurement and TEPCO's measurement of the Nishiyama stratum. This suggests fault activity contrary to the analysis of the ground structure around the KK plant carried out by TEPCO and accepted by the government. My view is that this is because KK is indeed "a nuclear power plant floating on a cup of starch".

(3) Can the casing of the reactor coolant recirculation pump motor survive the next earthquake?

KK-6&7 are Advanced Boiling Water Reactors (ABWR). This type of reactor has internal recirculation pumps. ABWR reactors have 10 recirculation pumps, which are welded onto the bottom of the wall of the reactor vessel. There are concerns that during an earthquake in excess of M7 the casing within which the recirculation pump motors are contained could buckle and break. The stress applied by a M7 earthquake is calculated to be 195 megapascals. By comparison, the design standard is 207 megapascals. That means there is a leeway of just 6%, suggesting that the casing would not withstand a M7.5 earthquake. There is a danger that it could break off. In such a case, the reactor coolant would drain out leading to a major accident.

Considering the abovementioned unresolved issues, TEPCO should not be allowed to restart KK Unit 7. To restart the reactor would be a huge gamble. It would fly in the face of the safety-first principle.

4. Radioactive pine needles

Measurements commissioned by CNIC of radioactive carbon-14 in the needles of pine trees growing by the Kashiwazaki-Kariwa Nuclear Power Plant raise questions about how much radioactivity was actually released during the Chuetsu-Oki Earthquake. Pine needles which grew in 2007, the year of the Chuetsu-Oki Earthquake, on trees in TEPCO's public relations center

had elevated specific activity of carbon 14 (294.8 mBq/gC from 2007 pine needles compared to 251.2 mBq/gC for 2008 pine needles). This suggests that more radioactivity was released during the earthquake than TEPCO claimed. It is unclear where the carbon 14 came from, but it is conceivable that it could have leaked from damaged fuel assemblies. This is further evidence that the full effects of the earthquake are still not properly understood. TEPCO failed to carry out measurements of environmental samples to assess radioactivity released during the earthquake. As it happened, CNIC already had a project to measure radioactivity around Rokkasho, so we decided to measure carbon 14 in pine needles from KK at the same time.

April: Another fire; more delays

Meanwhile, on April 17, the central government and the mayors of Kashiwazaki City and Kariwa Town had given their approval for the restart of KK Unit 7. Only the approval of the governor of Niigata Prefecture remains.

Governor Izumida said recently that he wanted an explanation to be provided to the Prefectural Assembly before making his final decision. It was

expected that the explanation would be provided on April 21, but the date was postponed after yet another fire at the plant. The fire, which arose in a storehouse on April 11, was the ninth fire at the plant since the earthquake. Tokyo Electric Power Company's inability to develop an effective fire control system has severely damaged its credibility in safety management.

Nevertheless, there is tremendous pressure on the governor to approve restart of reactor 7. The local movement against restart of the plant is fighting valiantly, but it will be difficult to prevent restart of the reactor for much longer. There are no immediate signs that any of the other reactors will be restarted soon.

Under these circumstances, people might be interested in material to help them refute the propaganda that is likely to accompany the restart of Unit 7. CNIC recently added to its website a report on the history of the seismic design of KK. This report shows how politics has always been prioritized over seismic safety in the design and operation of KK. We hope the report will be useful for people trying to stop nuclear power plants in other earthquake prone regions.

The April 6, 2009 report "Seismic Design of the Kashiwazaki-Kariwa Nuclear Power Plant: a Historical Perspective", by Philip White and Yukio Yamaguchi can be found at: <http://cnic.jp/english/topics/safety/earthquake/kkdesignhistory6ap09.html>

Source: Nuke Info Tokyo 129, March/April 2009 & update CNIC, 17 April 2009

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Latest: Restart KK-7 May 8?

As stated in the article, there is "tremendous pressure on the governor to approve restart" of Kashiwazaki-Kariwa reactor 7, and it is "difficult to prevent restart (...) for much longer". And indeed, on May 6, Reuters reports that the restart is imminent and the reactor may begin a trial-run as soon as May 8, expecting the approval of the governor on May 7.

Reuters, 6 May 2009

NUCLEAR POWER IN TAIWAN: ACCIDENTS WAITING TO HAPPEN

It was in February 2001, in order to mend political rift caused by cancellation of fourth nuclear power plant in Taiwan, both parties, the Democratic Progressive (DPP, ruling, then) and the Nationalist (KMT, ruling, current) Party agreed, Taiwan will be a "no nuclear homeland", and the fourth nuclear power plant is the last one.

(688.5950) Taiwan Environmental

Protection Union - As climate change is becoming too imminent to ignore, the only remedy of the KMT government is nuclear power, which happened to be the main theme in recent National Energy Forum, held last April. KMT's energy proposals includes: extended lifetime to 60 years for current reactors; 6 to 8 new reactors from 1.35GW each to increase the share of nuclear in electricity-mix from 13.5% in 2007 to over 30% after 2025. But strong opposition from civil society (and renewable industries) prevented those proposals reaching "consensus" in the April National Energy Forum. However, Premier Liu Chao-shiuan still stresses that "nuclear is *the* essential transition

energy towards low carbon economy" in his closing remarks.

By the way, this energy forum produced no targets on energy efficiency improvement, or the share of renewable energy and also no cap on industry energy consumption. President Ma Ying-jeou only promises CO₂-emissions returning to 2008 levels between 2016 and 2020, and back to 2000 levels at 2025. Taiwan's CO₂ emissions in 2000 were 100% more than that of 1990.

NPP4, disaster in the making

In 1996 General Electric won the contract of the fourth nuclear power plant (NPP4). Since it no longer manufactures any reactors, it subcontracted the reactors to Hitachi

and Toshiba, and the generators to Mitsubishi. One question is whether this arrangement violates the nuclear Non-proliferation Treaty since no diplomatic ties exist between Japan and Taiwan. Unlike the construction of the existing three nuclear power plants more than 20 years ago, construction of the fourth plant is now supervised by Taipower Company which has no experience in this matter. On February 5 2008, a local newspaper (the Apple Daily News: "Hidden Dangers of the fourth nuclear power plant") revealed that between January and November 2007, Taipower changed the GE design in 395 places without applying permission from the Atomic Energy Council, as law requires. Among the 395, a total of 20

alternations may jeopardize major safety features. One alternation is the welding of the emergency cooling water system. Instead of using nuclear-grade sealing gaskets in conduit, Neoprene, or Chlorinated Polyethylene materials are found in NPP4 nuclear islands. These materials are *specifically disallowed* in GE design. In addition, hot-dip galvanized steel or galvanized steel are replaced with zinc electroplating steel. Zinc electroplating steel is usually 10 to 30 times thinner than the other two types of steel.

In the same February 5 article, Taipower claimed that GE's design flaws makes welding of the cooling-water system impossible and that they had to alter the original design. In June 2008, in an article ("Current status and challenges of Taiwan nuclear energy") in the Taiwanese edition of Scientific American, Taipower states that the GE's NPP4 design is *over conservative*, and requires '*10 to 100 times more (steel, cement) than necessary*'. A Taipower representative admits that toxic fumes will be released if neoprene is heated. However, "*under such condition, everyone dies, who cares about toxic gases.*"

Saving 2/3 of cost is the main reason to replace galvanized steel with zinc electroplating steel. Taipower representative also claimed that power plant indoor is *dry* enough, therefore "*no need to worry about material life expectancy (corrosion)*." However, NPP4 safety specifications clearly state that material for indoor equipment has to last 40 years under 10 to 100% normal humidity, and maximum humidity during accident conditions - first 6 hours steam, next 99 days 18 hours 100%. Amid those questions, officials from the regulatory body - the Atomic Energy Council - said "(material of) *gasket and conduit are no concern of plant safety.*"

A recent incident revealed how good the

construction quality control is! In the night of September 13 2008, Typhoon Sinlaku hit northern Taiwan. The nuclear island of the second reactor of NPP4 was flooded with more than 2 meters of muddy water for 4 days due to heavy rain! Almost all major safety features were under water, including control rod moving assembly and cooling-water condenser, along with 50+ pumps, numerous valves, etc. To blame for this was a not properly sealed opening to an unfinished underground tunnel. What else will follow?

Low-level nuclear waste

By Taiwan's Atomic Energy Council's definition, everything except the used fuel is low-level nuclear waste. Initially, Taipower (i.e., the Taiwan Power Company) promised in the initial Environmental Impact Assessment of NPP4, to have a permanent low-level nuclear waste storage facility in operation by the end of 2001. This sentence was removed in later EIA modifications. As of December 2008, a total of 192,898 barrels of low level nuclear waste were produced from existing 6 reactors. Since shipments are blocked from unloading since 1996, some 97,960 barrels are stored at the designated site on Orchid Island, home of the Tao tribe. The rest is stored inside three nuclear power plants.

In May 2006, the DPP government passed the "Low-level nuclear waste permanent storage site act". Commissions formed by selected experts first have to find 'potential sites', and then select "suggested candidate sites (SCS)" from these "potential sites". Local governments of SCSs will vote (agree or reject) to be "candidate site". On August 29, 2008, the Ministry of Economic Affairs announced three potential sites: WangAn of PengHu (Pescadores) County, DaZen of TaiDong County, and MuDan of PingDong County. On March 17, 2009, it was announced that MuDan was eliminated

from the Suggested Candidate Sites. PengHu County opposes the possibility to be nuclear waste dumpsite by designating the location as a "Nature (Basalt) Reserve". But the Taipower Company said it will not give up easily.

Residences of DaZen of TaiDong County are mainly indigenous tribes, with an average income lower than national. The County parliament hosted a public hearing on April 8, opposing the central government decision and demanded removal of the nuclear waste from Orchid Island (which is located in the same county).

High-level nuclear waste

Currently all spent fuel is stored on-site. As of October 2008, there are 5,206, 6,864, 2,127 fuel assemblies, respectively, in three nuclear plants. Taipower claims it will fall short of space for spent fuel if all existing reactors run 40 years. Interim on-site (dry) storage for spent fuel was proposed for NPP1 and its EIA passed in 1995. Taipower revived the idea in 2005. After nine review meetings, the modified EIA finally passed in March 2008, despite opposition from local government and residences. A similar process for on-site dry storage of spent fuel from NPP2 is underway.

Citing costs-concern and self-dependency, it is decided that dry casks will be home made. Worries about this include lack of experiences, early rust and leakages in the humid salty environment, and that the interim storage may eventually become a permanent dump site.

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GLOBAL DAYS OF ACTIONS TO COMMEMORATE CHERNOBYL AND OPPOSE NUCLEAR POWER

On April 26, 1986, Reactor No 4 at the Chernobyl nuclear power station in the Ukraine exploded. Even though it is 23 years ago the world remembers it as the day the biggest technological and industrial disaster ever began. The irreversible and catastrophic impact on health, environment and economy will affect generations to come. Here we list, at random, a few of the actions that took place in different corners of the world.

Indonesia: Some 1,500 residents of the Kembang district staged a rally

protesting against a government plan to build a nuclear power station in their

village. The rally, also held to commemorate the Chernobyl tragedy,

was started from Proliman Balong. Wearing bandages bearing writings saying "No to PLTN" (nuclear power station) they rode on trucks to a site near Kembang district administration office. There they spread a 500-meter banner, on which they signed names to express support for the refusal of the nuclear project.

Namibia: Earthlife and the Labour Research and Resource Institute (LaRRI) are working together on an ongoing awareness campaign, which aims to inform the public of the dangers of a nuclear power plant. As part of this campaign, Earthlife produced a booklet 'Uranium - Blessing or Curse' informing about general issues regarding the uranium industry, while LaRRI published a booklet 'Uranium Mining in Namibia: The mystery behind low level radiation', which focuses on the impacts of uranium on mine workers health. On April 27 they organized meetings, screenings of movies and debates in the Namibian capital Windhoek.

Belarussia: A few hundred demonstrators gathered in Minsk, the capital of Belarus, to mark the anniversary of the 1986 Chernobyl disaster. The anniversary had traditionally had the most impact in Belarus, the country worst affected by the catastrophe, with about one-quarter of its territory contaminated. The annual Chernobyl commemoration in Minsk reached a peak on the disaster's 10th

anniversary in 1996, when tens of thousands of protesters clashed with police in central Minsk.

Turkey: Besides a demonstration in Sinop (the place still being named as the location for a Turkish nuclear power station) a small group of activists is holding a 'cycle tour against cancer' alongside the Black Sea. The cycling trip is set to be completed in 33 days and will follow the Black Sea coast because this was the region most affected by Chernobyl in Turkey. "We aim to inform and raise the awareness of people in the Black Sea area, where the possibility of getting cancer has increased by 40 percent since the Chernobyl disaster. We want to inform people about cancer, types of treatment, the rights of patients and the effects that Chernobyl had. As part of this project, the authorities responsible for Chernobyl will be asked for reparations to meet the financial costs of patients in Turkey. We are also aiming to bring to the attention of the authorities the necessity of appointing experts to the region's early diagnosis center to serve the public."

Finland: An antinuclear rally organized by a platform of many groups including Greenpeace and the Finnish Association for Nature Conservation gathered 800-900 people for a demonstration in front of the Finnish national parliament. According to the platform "Finns are quite hard to get on the streets. It's been a while since we

have felt that kind of energy on the streets in Helsinki and that makes me all the more optimistic about our struggle. Participants wore masks, bannards and a Trojan horse with yellow stones symbolizing nuclear waste. The main banner read "Risks for Finland - electricity for export?"

Australia: Noisy protesters targeted a global nuclear conference in Sydney, saying they wanted attendees to know they were not welcome. About 60 people from the Sydney Anti-Nuclear Coalition were demonstrating against the 'World Nuclear Fuel Cycle' conference. The police dragged several protesters away after they tried to get into the building and ordered the demonstrators to move on, but made no arrests. Australian Conservation Foundation spokesman Dave Sweeney praised the group. "It's been a bright and bouncy protest. It's had a bit of passion as it should, because there's high stakes here," he said.

France: Too much to list, more than 160 actions and activities took place, sometimes more than 10 in one big city. Demonstrations, debates, blockades, meetings, film screenings.

Please take a look at www.chernobyl-day.org for more action reports.

Sources: thejakartapost.com, planetark.org, several emails, www.chernobyl-day.org

IN BRIEF

Chernobyl still contaminating British sheep. It exploded 23 years ago today more than 2,250 km away, but Chernobyl is still contaminating sheep in the United Kingdom. According to the government's Food Standards Agency (FSA), the number of farms and animals still under movement restrictions in the UK has hardly changed over the past year. New figures given in the House of Commons late April show there are still 190,000 sheep subject to restriction orders on 369 farms or holdings. The details are: Wales 355 farms 180,000 sheep; England 9 farms 3,000 sheep; Scotland 5 farms and 3,000 sheep. Peat and grass in upland areas were polluted with radioactive caesium-137 released by the accident and brought to ground by rain. This is eaten by sheep and has persisted much longer than originally anticipated. The restrictions apply where concentrations of caesium-137 in sheep exceed 1,000 Becquerel of radioactivity per kilogram. Farmers have to mark the radioactive animals with indelible paint, and can't have them slaughtered for food until they fall below the limit.

N-Base briefing 611, 29 April 2009 / Sunday Herald, 26 April 2009

FirstEnergy finds hole in containment wall at rusty Pennsylvania reactor. During a recent visual inspection inside the Beaver Valley Unit 1 reactor containment building, a rusty discolored bubble was discovered under the protective paint coating on the inside wall of the steel liner to the thick concrete containment. When the unbroken paint bubble was removed for further inspection, First Energy Nuclear Corporation (FENOC) found a corrosion hole had eaten through from the outside of the 3/8 inch (0.95 cm) thick steel containment liner wall. Inspectors could see the concrete wall on the other side. The containment's steel liner is a principle safety barrier designed to be leak tight to contain the radioactive gas generated under

normal operations and accident conditions. FENOC says that a small piece of wet wood, trapped during the original construction and left in contact with the outside steel liner wall, was the cause of the severe corrosion. The plan is to weld a steel patch over the hole. With the reactor nearing approval of an unchallenged 20-year license extension application, the severity of the previously unnoticed corrosion caught Nuclear Regulatory Commission and company officials by surprise. The Beaver Valley reactor is located northwest of Pittsburgh.

Considering all the other debris pitched into the containment's concrete pours there is very likely more corrosion than can be found with visual inspection. Beyond Nuclear expects that NRC will issue a detailed information notice but fall short of its regulatory responsibility by not requiring industry action. In fact, NRC should require a prompt and thorough technical assessment of Beaver Valley's containment integrity in order to rule out the likely possibility that more unseen corrosion is still eating its way into the containment structure. Using state-of-the-art ultrasonic testing equipment, this could be done before the plant goes back on line and certainly before the agency approves the reactor's 20-year extension. Similarly, since debris was likely thrown into many more containment pours around the country, NRC should require an industry-wide scan of all the aging containment liners. Remember, FirstEnergy is the same company that operated its corroded Davis-Besse reactor with the hole in the head. And NRC is the same agency with its head in a hole that favored getting Davis-Besse back on line quickly despite graphic photos of severe corrosion that warned otherwise. In both cases, the NRC gambling of safety margins for production margins corrodes public confidence and increases the risks from nuclear accidents.

Beyond Nuclear Bulletin, 1 may 2009

UK: Wind farm demolished for nuclear power plant? One of the oldest and most efficient wind farms in Britain is to be dismantled and replaced by a nuclear power station under plans drawn up by the German-owned power group RWE. The site at Kirksanton in Cumbria - home to the Haverigg turbines - has just been approved by the government for potential atomic newbuild in a move that has infuriated the wind power industry. Colin Palmer, founder of the Windcluster company, which owns part of the Haverigg wind farm, said he was horrified that such a plan could be considered at a time when Britain risks missing its green energy targets and after reassurance from ministers that nuclear and renewables were not incompatible.

The Haverigg site, on the fringes of the Lake District, was commissioned in 1992 and is believed to be one of only two of its type in this country. The scheme has been praised by Friends of the Lake District as a fine example of appropriate wind energy development and the turbines were financed by a pioneering group of ethical investors (now called the Triodos Bank). The site was subsequently expanded to a total of eight turbines. Haverigg was still one of the most efficient wind farms with a 35% "capacity factor" - or efficiency - compared with an average of 30%, said Palmer. It is a historically important wind farm for the UK, which played a key role in inspiring others.

Meanwhile, a new report by the independent think-tank, the Centre for International Governance Innovation (CIGI), has found that the UK Government's "obsession" with nuclear power is hindering development of sustainable energy alternatives which were better and cheaper. The report, 'The British Nuclear Industry - Status and Prospects', written by Dr. Ian Davis, states: "The Government's obsession with nuclear power is undermining and marginalizing more efficient and safer technologies - the real energy solutions." Renewable energy, greater energy efficient and other technologies could fill the gap when existing reactors became redundant.

The Guardian (UK), 28 April 2009 / N-Base Briefing, 29 April 2009

Kazakhstan: proposal to host fuel-bank sparks anti-nuclear protest. On April 14, police in Almaty the capital of Kazakhstan, have prevented a small protest by opponents of a Kazak government proposal to host a "nuclear fuel bank" that would provide a secure supply to power stations across the world. It was never going to be a big demonstration, just 30 or so like-minded representatives of non-government groups involved in human rights and similar areas. But it did not even get off the ground. As they were setting out from their office for Almaty's main square, three activists from the human rights group Ar.Ruh.Hak were detained by police. Seven members of the opposition party Azat and two journalists were picked up separately. All 12 were taken to a police station and released after making statements. In a statement, the seven NGOs which planned the protest meeting said the lack of government transparency on issues like the nuclear one should raise concerns. For opponents of the plan, the legacy of Semipalatinsk (a testing ground where over 450 atom bombs were set off by the Soviet authorities between 1949 and 1989) plus the risk that the fuel bank will not be secure, constitute serious objections. Kazakhstan is a major producer of uranium - it has about 20 per cent of the world's ore reserves.

The Fuel-Bank, which would be supervised by the IAEA would provide 'a secure and controlled source of fissile material for peaceful use' as the Agency likes to put it. Countries would no longer have 'an excuse' to develop uranium enrichment programs, which carry the risk of being used for 'non-peaceful meanings'. Countries would simply buy fuel from the bank when they needed it. After the IAEA first came up with the idea in 2005, Kazakhstan and Russia signed an agreement with the agency to look at setting up a storage facility in the Siberian city of Irkutsk, which has a uranium enrichment plant. Now Kazakhstan has offered its own facilities. President Nursultan Nazarbaev revealed the proposal when Iranian president Mahmoud Ahmadinejad visited the capital Astana on April 6 that prompted Kazak NGOs into action.

Institute For War And Peace Reporting, 17 April 2009

Nuclear safety in Canada. Unlike the governments of other developed nations, the Canadian government and Parliament can now directly control the start-up and operation of nuclear reactors. This is the result of a recent Federal Court ruling that

allows the government to remove the head of the Canadian Nuclear Safety Commission (CNSC) without cause. Unless the Supreme Court overturns this decision or parliamentarians pass legislation to remove this power from the government, protection from nuclear mishaps in Canada could depend on the political whims of sitting governments and Parliament. The Federal Court ruled earlier in April that the Harper government had the right to remove without cause the then-president of the CNSC, Linda Keen. This means that the CNSC head serves at the pleasure of the government rather than until the end of an appointed term, subject only to good behavior. The incident that precipitated the court case was Keen's refusal, despite pressure from the Prime Minister and natural resources minister, to restart a reactor to alleviate a shortage of medical isotopes. Keen said the reactor did not meet its licensing requirements. The government removed Keen as head of the CNSC, and Parliament voted to restart the reactor.

Toronto Star (Canada), 21 April 2009

IAEA Inspectors Asked to Leave DPRK. On April 14, IAEA issued a statement on the situation in North-Korea: "The Democratic People's Republic of Korea (DPRK) has today informed IAEA inspectors in the Yongbyon facility that it is immediately ceasing all cooperation with the IAEA. It has requested the removal of all containment and surveillance equipment, following which, IAEA inspectors will no longer be provided access to the facility. The inspectors have also been asked to leave the DPRK at the earliest possible time.

The DPRK also informed the IAEA that it has decided to reactivate all facilities and go ahead with the reprocessing of spent fuel." IAEA inspectors removed all IAEA seals and switched off surveillance cameras on April 15. They left the country the following day.

IAEA inspectors returned to monitor and verify the shutdown of the Yongbyon nuclear facilities in the Democratic People's Republic of Korea, after a report outlining the modalities reached between the Agency and the DPRK were approved by the IAEA on 9 July 2007.

The latest move by DPRK is a reaction on an April 13 statement by the United Nations' Security Council denouncing the North's rocket launching as a violation of a resolution after the North's first nuclear test in 2006 that banned the country from nuclear and ballistic missile tests. The Council called for tightening sanctions.

On April 29, North Korea said that it would start a uranium enrichment program, declaring for the first time that it intended to pursue a second project unless the United Nations lifted sanctions.

IAEA Press Release, 14 April 2009 / New York Times, 29 April 2009/ IAEA Staff report, 9 July 2007

Trouble for UAE-US nuclear agreement. The president of the U.S.-UAE Business Council, Danny Sebright, expected U.S. president Barack Obama to issue a presidential determination that the nuclear agreement with the United Arab Emirates, signed in January, in the last days of the administration of former President George W. Bush, is in the best interests of the United States. That would set the stage for U.S. Secretary of State Hillary Clinton to formally notify Congress of the United States' intention to enter into the nuclear energy cooperation deal with one of Iran's neighbors, giving lawmakers 90 days to vote down the pact if they choose.

Under the "123 deal," similar to the one the United States signed last year with India, Washington would share nuclear technology, expertise and fuel. In exchange, the UAE commits to abide by the Nuclear Non-proliferation Treaty and the International Atomic Energy Agency safeguards. The small oil-rich Gulf nation (the world's third largest oil exporter in 2007) promises not to enrich uranium or to reprocess spent nuclear fuel to extract plutonium, which can be used to make nuclear bombs. The deal is part of a major UAE investment in nuclear, and it has already signed deals to build several nuclear power plants. The United States already has similar nuclear cooperation agreements with Egypt and Morocco, and U.S. officials said Washington is working on similar pacts with Saudi Arabia, Bahrain and Jordan.

Lobby for the project is ongoing: a May 5, report on the economic benefits of US-UAE 123 Agreement said the UAE nuclear program would generate contracts worth more than US\$41 billion benefiting American companies that could participate as suppliers or as central leaders in consortiums bidding on projects. The sky is the limit.

However, opposition about the deal is growing rapidly after footage was made public in the U.S. On the tape, an Afghan grain dealer is seen being tortured by a member of the royal family of Abu Dhabi, one of the UAE's seven emirates. The ratification of the deal has been postponed.

Meanwhile, the UAE last year surpassed Israel as the United States' largest export market in the Middle East. Furthermore, the small country has become the third-biggest arms importer worldwide, SIPRI announced earlier in April. The figures from the UAE reflected what the Stockholm International Peace Research Institute (SIPRI) described as a "worrying" regional trend of increased arms imports into the Middle East. The country accounted for 6.0 percent of the world's arms imports between 2004 and 2008, according to the new report from the (SIPRI) -- the same proportion as South Korea. Only China with 11 percent and India with 7.0 percent, had a larger share of the market, said the report. The UAE's position was all the more striking because in the previous study, covering the period 1999-2003, the UAE was only the 16th biggest importer of military equipment worldwide.

Middle East Online, 17 April 2009 / Reuters, 29 April 2009 / CNN, 29 April 2009 / Business24-7.ae, 5 May 2009

'Near Miss' at Sellafield's High Level Waste Storage Tank Complex. On April 2, an incident at Sellafield's High Level Waste (HLW) Storage Tank Complex occurred, involving a loss of coolant water to all the storage tanks following the incorrect re-statement of one of a number of control valves that had been isolated for maintenance. Because some of the storage

tanks have a higher heat loading (the liquid HLW is physically hot as well as being highly radioactive) than others, efforts to re-instate the cooling water supply were directed first at the three tanks with the highest heat loading. Cooling was restored to the first of these after 75 minutes, and to all three tanks after 3 hours. Reporting today on the incident, Sellafield's in-house Newsletter states that cooling was restored to all tanks within 8 hours. This is perilously close to the timescale of 10.5 hours catered for in the Sellafield site's emergency plan (REPPiR).

Since the closure of Sellafield's Calder Hall reactors in 2003, an accident involving the loss of coolant to the HLW tanks is designated as the 'Reference Accident' (worst credible accident) for Sellafield's Emergency Plans under the Radiation and Emergency Preparedness and Public Information Regulations (REPPiR). The Reference Accident is described as being 'a failure of the entire cooling water distribution system to the High Level Radioactive Waste Store following a single flange failure or leak from a length of pipe. The accident scenario assumes a failure to reinstate the cooling system within a period of 10.5 hours and that it has not been possible to isolate the failed section of pipe'.

The existing tanks, holding a significantly larger inventory of radioactive materials than were released during the Chernobyl accident, were commissioned between 1955 and 1990. They have long been subject of concern by the NII through the increasing failure of cooling components. Plans to construct and install new, smaller tanks are currently being assessed by Sellafield and the regulators.

CORE Press release, 9 April 2009

IAEA: Still no successor for ElBaradei. A total of five candidates have put themselves forward to succeed Mohamed ElBaradei as head of the International Atomic Energy Agency. The five come from Belgium, Spain, Slovenia, Japan and South Africa. The Japanese Ambassador to the IAEA in Vienna, Yukiya Amano, as well as South Africa's representative, Abdul Samad Minty, have reentered the contest after failing to win a majority in a first voting session among IAEA governing board members in March. The other three are:

* Jean-Pol Poncelet, a former Belgian Deputy Prime Minister who currently serves as a senior vice president at the French nuclear group Areva (responsible for sustainable development and the improvement of quality processes).

* Spanish nuclear expert Luis Echavarri, the head of the Paris-based Nuclear Energy Agency (NEA) of the Organization for Economic Co-operation and Development

* The fifth potential successor is the Slovenian Ernest Petric, a former ambassador in Vienna who currently serves as a judge on his country's constitutional court.

In a first session of voting among the 35 countries on the IAEA board, Amano narrowly missed the necessary two-thirds majority, while Minty had the support of only 15 countries.

The U.S. and European countries supported Amano, as they saw him as a nuclear-policy expert who is considered to be less politically outspoken than Minty or ElBaradei.

A new date for voting at the IAEA board has yet to be fixed. IAEA Board Chairperson Ms. Feroukhi is soon to initiate informal consultations on the nominations receive.

Dr. ElBaradei, who is to retire on November 30, is the IAEA's fourth Director General since 1957. He was first appointed to the office effective December 1997. He follows Hans Blix, IAEA Director General from 1981 to 1997; Sigvard Eklund, IAEA Director General from 1961 to 1981; and Sterling Cole, IAEA Director General from 1957 to 1961.

EarthTimes, 27 April 2009 / IAEA Staff Report, 29 April 2009

China: warnings from within. According to China's director of the National Nuclear Safety Administration, Li Ganjie, the quick expansion of China's nuclear energy production is far outpacing the regulation of its nuclear reactors. "At the current stage, if we are not fully aware of the sector's over-rapid expansions, it will threaten construction quality and operation safety of nuclear power plants," Li Ganjie told an International Ministerial Conference on nuclear energy.

The Communist Party newspaper Renmin Ribao on April 21 reported Ganjie saying in unusually strong terms that China has insufficient capacity to handle nuclear waste. Li said the storage of past nuclear waste was 'not entirely under control'. In a report presented to the IAEA-sponsored international conference on the future of nuclear power Li stated that nuclear safeguards in China are weak and insufficient to keep up with the country's need to develop nuclear energy and technology: there is a dearth of personnel, technical equipment, financing and investment.

Planetark, 21 April 2009 / www.monsterandcritics.com, 21 April 2009

U.K.: Faslane leaks. The revelation that there have been a series of radioactive leaks into the Firth of Clyde from the Ministry of Defence's Faslane nuclear submarine base has once again focused attention on the lack of regulation for military facilities. Documents released to Channel 4 News under Freedom of Information show there have been over 40 leaks in the last three decades and at least eight in the past 10 years. Military facilities have immunity from regulation and operate under 'letters of agreement' with the Scottish Environment Protection Agency and their equivalent regulators in England and Wales.

SEPA is so concerned at the leaks and general waste management at Faslane that it would have considered closing the facility down if it had the power. A Ministry of Defence report said failure to abide by safety procedures at Faslane was a "recurring theme" and was a cultural issue that must be addressed. The report also accepted Faslane failed to use the 'best practicable means' to control waste, there was poor design of holding tanks, weld defects in piping, a lack of accurate drawings of the plant and low staffing levels.

N-Base Briefing, 29 April 2009

WISE/NIRS NUCLEAR MONITOR

The Nuclear Information & Resource Service was founded in 1978 and is based in Washington, US. The World Information Service on Energy was set up in the same year and houses in Amsterdam, Netherlands. NIRS and WISE Amsterdam joined forces in 2000, creating a worldwide network of information and resource centers for citizens and environmental organizations concerned about nuclear power, radioactive waste, radiation, and sustainable energy issues.

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.

Receiving the WISE/NIRS Nuclear Monitor

US and Canada based readers should contact NIRS for details of how to receive the Nuclear Monitor (address see page 11). Others receive the Nuclear Monitor through WISE Amsterdam.

For individuals and NGOs we ask a minimum annual donation of 100 Euros (50 Euros for the email version). Institutions and industry should contact us for details of subscription prices.

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Nuclear Monitor needs more contributors

The Nuclear Monitor exists for more than three decades already. In 1978 the first issue was produced, although it was called "The WISE News Communiqué" at that time.

Since 1978 many things have changed, but to produce 20 issues of the magazine annually is still a struggle. And equally important for that matter. Our readers (you) value both quality and quantity.

The Nuclear Monitor is produced by a very small group of people. We do not pay for articles being written for us, we never did and it's hard to imagine we ever will. But that small group is looking for some help.

In short: we are looking for people, especially in Asia and Africa, but also in Australia and the America's, who are willing to write about local and regional developments concerning (anti-) nuclear issues.

We think that currently the content of the magazine leans too much on West-European sources and contributors. To have a more balanced and global perspective, we need people with knowledge of, and access to, non-English and/or non-German sources and background. There are so many things we are not aware of, even in this digital highway day and age. It is simply not enough to read all the wires from the big agencies, we want the stories from the ground, the grassroots fighting the nuclear industry, the reports of actions and campaigns, the incidents and accidents that not make it to the mainstream media, the analysis no-one wants to make because they are 'too difficult'

So, if you want to contribute - be it regularly or sporadic- to the Nuclear Monitor, or want to become more involved in the (production) of the magazine please contact WISE-Amsterdam at wiseamster@antenna.nl

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