

NUCLEAR MONITOR

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FRANCE: NEARLY 5X AS MUCH PLUTONIUM IN GLOVE BOXES AS EXPECTED

The Nuclear Safety Authority, (Autorité de Sûreté Nucléaire, ASN) France's nuclear regulator, has suspended decommissioning of the ATPu facility at Cadarache and castigated French Atomic Energy Commission (operator CEA), after discovering that the plutonium inventory was much higher than thought.

(696.5982) WISE Amsterdam - The Nuclear Safety Authority said that the Atomic Energy Commission (Commissariat à l'Energie Atomique, CEA) had discovered that plutonium deposits inside glove boxes at the ATPu facility at Cadarache had been underestimated as early as June 2009 but had failed to notify it of the underestimation until early October.

The plant produced plutonium-containing mixed oxide (MOX) fuel pellets for 40 years, during which time it was estimated to contain a total of 8 kg of plutonium in deposits that gradually built up in inaccessible parts of some 450 glove boxes. However, around 22 kg of plutonium deposits have been recovered since decommissioning began in March 2009, and the CEA now estimates that the total could be in the region of 39 kg.

Although the incident itself was without any safety consequences, the regulator noted that underestimation of the quantities of plutonium reduces safety margins calculated to prevent criticality accidents: "ASN considers the lack of detection of this underestimation during the operating period of the installation, as well as the late reporting of this event to the ASN, reveal a gap in safety culture." Because the operators of Cadarache (which has 19 nuclear installations and the international ITER fusion

demonstration project) have absolutely no idea how much plutonium they were supposed to be safeguarding, we cannot be sure how much of this plutonium may have been stolen to make nuclear weapons or is otherwise unaccounted for? We'll never know – until it's too late, obviously .

ASN was further incensed by what it considered the late reporting of the matter. A statement from the regulator said that it had only been informed of the underestimation on 6 October and that its inspection on 9 October confirmed that the CEA had known about the discrepancy since June. The ASN was highly critical of this delay, which caused it to raise the incident from Level 1 to Level 2 on the International Nuclear Event Scale (INES). However, CEA has since responded with an alternative timeline in which it verbally informed ASN of the discrepancy on 11 June. Furthermore, CEA said that the discrepancy had been recognized by the Euratom inspectors on 23 June as well as other officials from the Institute of Radiation Protection and Nuclear Safety (IRSN) on 1 and 2 July.

French energy and ecology minister Jean-Louis Borloo issued a statement calling for "complete transparency" on the situation: "This transparency and safety requirements are essential conditions for

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the supply of electricity from nuclear sources," he said. "They will be respected."

The ATPu started up in 1964 and was operated by French fuel cycle company Areva from 1991 until its closure in

June 2008.

Sources: World Nuclear News, 16 October 2009 / ACDN Website, 15 October 2009 / Nuclear Reaction, 20 October 2009

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BELGIAN NUCLEAR PHASE-OUT TO BE ABORTED?

At the end of the sixties Belgium decided to start producing a large share of its electricity with nuclear. Between 1975 and 1985 a total of 7 reactors were put online. Today nuclear is responsible for 55 % of total power production, making Belgium the fourth most nuclear country worldwide, after France, Lithuania and Slovakia.

(696.5983) Bond Beter Leefmilieu - In 2003, with the Green Party in government, a phase-out law was passed, deciding to stop the nuclear reactors after 40 years of lifetime. Under the phase-out law, the oldest nuclear plants (Doel I and II and Tihange I) representing one third of the nuclear capacity, should thus be closed in 2015. But the new federal government, elected in 2007, now decided to extend the life of the oldest plants by 10 years at least.

The decision of the government was carefully prepared by the Social-Democrat energy-minister, Paul Magnette. The possibility of an extension of the lifetime of the nuclear power plants was foreseen under the phase-out law, but submitted to very strict conditions ('major risk for supply'). Minister Magnette ordered a study that should have proved that these conditions had been met, but failed to do so. Most legal specialists agree that, in order to legalise the government's decision, the parliament will have to change the phase-out law.

The official position of the government is that the energy supply could be at risk, if the date of 2015 is kept. This position is based on the conclusions of the 'Gemix-study' that was ordered by minister Magnette. But in the first parliamentary debate about the Gemix-study, the conclusions were under severe attack. The spokesperson of the national energy-regulating body, the CREG, informed the MP's that the calculations in the Gemix study were not based on the correct figures. This

was remarkable, for the Gemix-study mentioned CREG as the source of the figures, whereupon the conclusions were based. The CREG added they have analysed the situation and came to the conclusion that even after closing the 3 nuclear reactors in 2015, the capacity of the remaining Belgian electricity production plants, will still meet the electricity needs.

Environmental organisations, such as Greenpeace, had already criticized some major elements in the Gemix-study, such as the unrealistic growth of demand (1,2% a year), underestimation of the energy-efficiency potential; and underestimation of the capacity available from gas fired STEG's (combined heat-power): 63 % instead of 90 %.

All this leads to the conclusion that the Gemix-study has been strongly manipulated in order to meet the goals set by the government. One of the international experts, which contributed to the study, Dr. Eichhammer of the German Fraunhofer Institute, does not support the Gemix-conclusions.

The chances, however, that the government will change its position, are considered to be very small, as all parties in the cabinet seem to agree on the issue.

Link to the budget

The decision by the Belgian government is strongly linked to the national budget-issue. The deficit, due to the bank- and economical crisis, reaches more than 25 billion euro's. Minister Magnette

linked the ending of the nuclear phase-out to a major contribution of the nuclear monopolist Electrabel (Group Suez /Gaz de France) to the Belgian budget. The benefits of the written out old reactors for Electrabel are calculated to be over 1.2 billion euro (US\$1.7 bn) a year, but Electrabel does not seem to be prepared to pay more than 215-245 million euro till 2015. This is far below what Magnette first announced. But now the government seems to have accepted the Electrabel figures, even though it remains unclear if Electrabel will finally pay any contribution at all. As usual, government and Electrabel meet behind closed doors and decision making is far from being transparent.

Electrabel is traditionally very strongly linked to the Belgian political parties and has kept control over the Belgian energy-policy for more than 30 years. Only after the Christian-Democrats lost control over the federal government (period 1999-2007) the power of Electrabel was strongly weakened, but as the elections of June 2007 brought the Christen-Democrats back to the centre of power (first with prime minister Yves Leterme, now with his successor Herman van Rompuy, both CD&V – Flemish Christian democrats), 'old politics' seem to be restored.

Besides that, also the Walloon Socialist Party has renewed its long lasting relationship with Electrabel. Only the Green parties and the Flemish socialists (all opposition parties currently) criticize the governmental decision. Right winged opposition parties do support

the majority on the principle of stopping the nuclear phase out.

For the environmental movement, the abandoning of the nuclear phase-out would be a major defeat. It would mean a serious set back for the development

of renewable energy and for energy efficiency. Environmentalists have failed to convince the public opinion that closing the first reactors would not lead to 'switching off the light', as conservatives and nuclear lobbyists have repeatedly stated.

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DON'T NUKE THE CLIMATE – SUPPORT THE CAMPAIGN

As everybody is gearing up towards the COP 15 December meeting in Denmark, it is important to make one lesson clear. Keep nuclear out of any post-Kyoto climate agreement! Sign the petition, join the actions in Copenhagen and/or take action at home. Nuclear power is an obstacle to carbon mitigation and contradicts sustainable development.

(696.5984) WISE Amsterdam - The nuclear industry is using the issue of climate change and energy supply as a vehicle to win political and financial support for its dirty and dying sector. Even a massive, four-fold expansion of nuclear power by 2050 would provide only marginal reductions (4%) in greenhouse gas emissions, when we need global emissions to peak at 2015 and 50 - 80% cuts by 2050. Nuclear energy's 'contribution' to fighting climate change would come too late (long after 2020), with huge costs (US\$ 10 trillion, 7.5 trillion Euro) and would create a myriad of other serious hazards related to accidents, waste and proliferation. These large costs and negative impacts make nuclear energy an obstacle to the necessary development of effective, clean and affordable energy sources – both in developing and industrialized countries.

of disposal increase massively and both nuclear materials and technologies are spread.

Marginal contribution

Expensive and dangerous nuclear power would provide only a marginal contribution to carbon mitigation. The OECD International Energy Agency's (IEA) Energy Technology Perspectives 2008 Blue Map scenario assesses what energy mix could achieve a 50%

decade of the industry's fastest growth, it built an average of 17,000 MW a year – still only half the rate needed to realize the IEA's Blue Map scenario. But the IEA believes we can build 32,000 MW capacity every year from now to 2050.

Then there's the cost. Moody's [1] last year estimated the investment cost for new reactors at USD 7,500 USD/kW. Assuming this, the required 1,400 large new reactors would cost around USD 10,500 billion (10 trillion) – and this is only the upfront investment.

“Nuclear energy is not the panacea for tackling global warming. Even if you set aside the problem of long-term waste storage and the danger of operator accident and the vulnerability to terrorist attack, you still have two others that are more difficult. The first problem is one of economics..... The second is nuclear weapons proliferation. For eight years when I was in the White House, every problem of weapons proliferation was connected to a reactor program.”

– Al Gore, *Former Vice President of the United States, Nobel Peace Prize Winner, 2007*

Expensive, dirty and hazardous nuclear power stands in the way of clean and sustainable solutions. It could take US\$10 trillion or more to build enough reactors to produce 9,900 TWh of “nuclear electricity” as projected under the IEA 2008 “Blue Map” scenario. Building enough wind farms to produce the same

Activities related to nuclear power must not be allowed to become eligible for any post-Kyoto Protocol mechanisms in order to avoid:

- Undermining climate protection by wasting time and taking resources away from more effective and clean solutions;
- Dumping this expensive and unsafe technology on developing countries who would be landed with the associated economic and environmental impacts (accumulation of massive financial debts, increased dependency on foreign fuel and technologies, increased risk from reactor accidents and contamination);
- Decreasing global security as volumes of nuclear waste with no safe methods

reduction in carbon emission by 2050. The agency assumes a four-fold increase of nuclear power generation, from today's 2,600 TWh/year to 9,900 TWh/year in 2050. But this would only reduce CO2 emissions from the energy sector by 6% (around 4 % of overall greenhouse gases).

Even getting to this 6% would require unprecedented rates of growth, sustained over four decades. The nuclear industry would have to build an average of 32 large (1,000 MW) nuclear reactors every year from now until 2050. Compare this with the last decade's average where the nuclear industry added 3000 MW of new capacity a year. In the 1980's, the

amount of electricity, for example, would cost US\$ 6 trillion at current prices. And, these costs would decrease over time.

Wind power has no associated fuel costs and does not require expensive dismantling of its power plant at the end of its life and long term disposal of radioactive waste as is required in the decommissioning of a nuclear power plant. Other calculations show that, compared to nuclear, wind power at today's costs replaces twice as much carbon per invested dollar and energy efficiency measures three to six times more. [2]

Even the IEA's 2008 Blue Map scenario itself shows that, while massive nuclear

expansion reduces carbon emissions from the energy sector by 6%, the potential of renewable energy sources is around four times greater, and the potential of energy efficiency six times greater.

What you can do:

- * Go to www.dont-nuke-the-climate.org and join the campaign
- * If you are in Copenhagen from mid-

December; join the different anti-nuclear activities, soon to be announced on www.antenna.nl/wise, www.dont-nuke-the-climate.org and www.nirs.org

One action in December in Copenhagen is already known; on Monday, December 14, we will hand over the collected signatures to the negotiators in Copenhagen.

References:

- [1] New Nuclear Generating Capacity - Potential Credit Implications for U.S. Investor Owned Utilities, Moody's Corporate Finance, May 2008
- [2] Amory Lovins, The Nuclear Illusion, May 2008.

Source and contact: WISE Amsterdam

CLEANING UP THE HANFORD UNDERGROUND RADWASTE TANKS

Given the high cost to empty and treat Hanford's radioactive tank wastes, the government should consider leaving more waste in the underground tanks, according to a new Government Accountability Office report: *Nuclear Waste: Uncertainties and Questions about Costs and Risks Persist with DOE's Tank Waste Cleanup Strategy at Hanford*. The estimated price tag to empty the underground tanks of radioactive waste and treat it are rapidly escalating and could be more than US\$ 100 billion (Euro 67 billion) -- rather than the US\$ 77 billion that Department of Energy estimates, according to the report.

(696.5985) WISE Amsterdam - The Department of Energy (DOE) is responsible for one of the world's largest environmental cleanup programs: the treatment and disposal of nuclear waste created as a by-product of producing nuclear weapons. Decades of nuclear weapons production have left a legacy of radioactive and hazardous wastes to be cleaned up at DOE sites across the country. One of DOE's most contaminated locations is its Hanford Site, which lies along the Columbia River in southeastern Washington State.

From 1944 through 1988, about 525 million gallons of radioactive tank waste was generated by Hanford's plutonium-processing plants. The federal government initially managed this waste by intentionally discharging it into the ground; reducing its volume through various waste concentration methods, such as evaporating off the liquids; and building underground tanks to store the waste until it could be treated and permanently disposed of.

From the 1940s through the mid-1960s, 149 underground "single-shell" storage tanks were built at Hanford. Originally expected to last 10 to 20 years until a permanent disposal solution could be found, each of these tanks consisted of an outer concrete wall lined with one layer of carbon steel. Together, the single-shell tanks contain almost 30

million gallons of waste; about 27 million gallons are in solid or semisolid form, and about 3 million gallons are liquid. By the mid-1990s, 67 of the single-shell tanks had leaked or were presumed to have leaked about 1 million gallons of waste into the surrounding soil. To address concerns with the design of the single-shell tanks, a new tank design with two carbon-steel shells was adopted in the late 1960s. From 1968 through 1986, 28 of these double-shell tanks, were built and sited in 6 more tank farms. Together, these double-shell tanks contain about 26 million gallons of waste.

In 1989, DOE's original strategy called for treating waste only from the double-shell tanks, but in 1991, DOE decided to treat waste from all 177 tanks. To help minimize further leaking, DOE had, by 2005, transferred most of the liquid in the single-shell tanks to the double-shell tanks, a process called interim stabilization. DOE is currently retrieving the remaining waste from single-shell tanks and moving it to the double-shell tanks in preparation for treatment.

Since plutonium production ended at Hanford in the late 1980s, DOE has spent more than US\$ 12 billion (in current dollars) to manage the tank waste and explore ways to treat and dispose of it. After beginning and discontinuing several different tank waste cleanup strategies, DOE has now

embarked on a strategy that involves building a complex of treatment facilities, collectively called the Hanford Waste Treatment and Immobilization Plant. Currently under construction and estimated to cost US\$ 12.3 billion to design, build, and commission, this waste treatment plant consists of a laboratory for analyzing the waste's composition; a pretreatment plant to separate the waste into two streams (a highly radioactive fraction called high-level waste and a lower-radioactivity fraction called low-activity waste); two waste treatment facilities, one for high-level waste and one for low-activity waste; and more than 20 support facilities. DOE estimates that it will cost tens of billions of dollars and take until 2047 to complete tank waste cleanup and permanently close the underground storage tanks.

The Government Accountability Office (GAO) was asked by the House Appropriations Subcommittee on Energy and Water Development, to assess (1) DOE's current tank waste cleanup strategy and key technical, legal, and other uncertainties; (2) the extent to which DOE has analyzed whether this strategy is commensurate with risks from the wastes; and (3) opportunities to reduce tank waste cleanup costs.

DOE's tank waste cleanup strategy consists of five key phases--waste

High Level Waste storage tanks at Sellafield (U.K.)

The first vital step in combating and reducing the highest hazard area at Sellafield – the High Level Waste (HLW) storage tanks – has been put out to tender by Sellafield Ltd., early October. Invitations to tender for the work contract, relates to 'the design and build of a highly active liquid effluent plant'. Sellafield Ltd has confirmed that the contract relates to the provision of a number of new HLW storage tanks as well as additional 'evaporative capacity' - a reference to downstream plant that condense the liquid HLW prior to its conversion to solid glass form. In a number of phases stretching over the next 8 or 9 years, the contract is believed to be worth up to BP 1.5 billion (Euro 1.6 bn , US\$ 2.4 bn).

Sellafield has 21 HLW storage tanks. Whilst the older tanks, numbered 1-8 and commissioned between 1955 and 1968, are no longer in service, the condition of some of the newer tanks 9-21 (1970-1990) has been the subject of significant concern by the Health & Safety Executive's Nuclear Installations Inspectorate (NII) in recent years.

Sellafield's existing HLW storage tanks (9-21) are each designed to hold up to 150 cubic meters of liquid HLW. Each is fitted with 7 internal cooling coils as well as external cooling jackets. Whilst the jackets on tanks 9-11 cover the tank base and extend 1 meter up the side, the jackets on tanks 12-21 cover not only the tank base but also extend the full height of the tanks to a point above the maximum liquor level.

Whilst the failure of some of the cooling coils, which cannot be replaced, has led to repeated concerns in recent years, new warnings have been issued by the NII on other high risk facilities at Sellafield. Included in the high risk category is an old fuel storage pond B30 known to the workforce as 'Dirty Thirty'. Built in 1959 to prepare and store Magnox reactor fuel prior to reprocessing, B30 was closed in the early 1970's. Now under decommissioning, its inventory includes large quantities of sludge from corroded fuel and a variety of old operational equipment. At a local liaison meeting on the **October 1, NII warned that the risks of something serious happening in Sellafield's old plants are far too high.**

CORE Briefing 05/09, 9 October 2009

characterization, retrieval, pretreatment, treatment, and permanent disposal--but critical uncertainties call into question whether the strategy can succeed as planned. Technical uncertainties include whether DOE can retrieve waste from tanks at the rate needed to support continuous operation of the waste treatment complex now under construction and whether key treatment technologies will work. Legal uncertainties include whether DOE can treat and dispose of some tank waste as other than high-level (highly radioactive) waste and how much residual waste can be left in the tanks when they are eventually closed. Such uncertainties could lead to significant cost increases and further delays in completing Hanford's tank waste cleanup activities. DOE has not systematically evaluated whether its tank waste cleanup strategy is commensurate with risks posed by the wastes. DOE lacks credible or complete estimates of how much the strategy will cost or how long it will take. The total project cost of constructing the waste treatment plant alone grew from US\$ 4.3 billion in 2000 to US\$ 12.3 billion in 2006. In addition, DOE did not include, or has been unable to quantify, a number of significant costs in its current estimate of the overall cost of its cleanup strategy. For example, DOE has not included some actual expenditures to date or storage costs for high-level waste canisters. Hanford workers have emptied

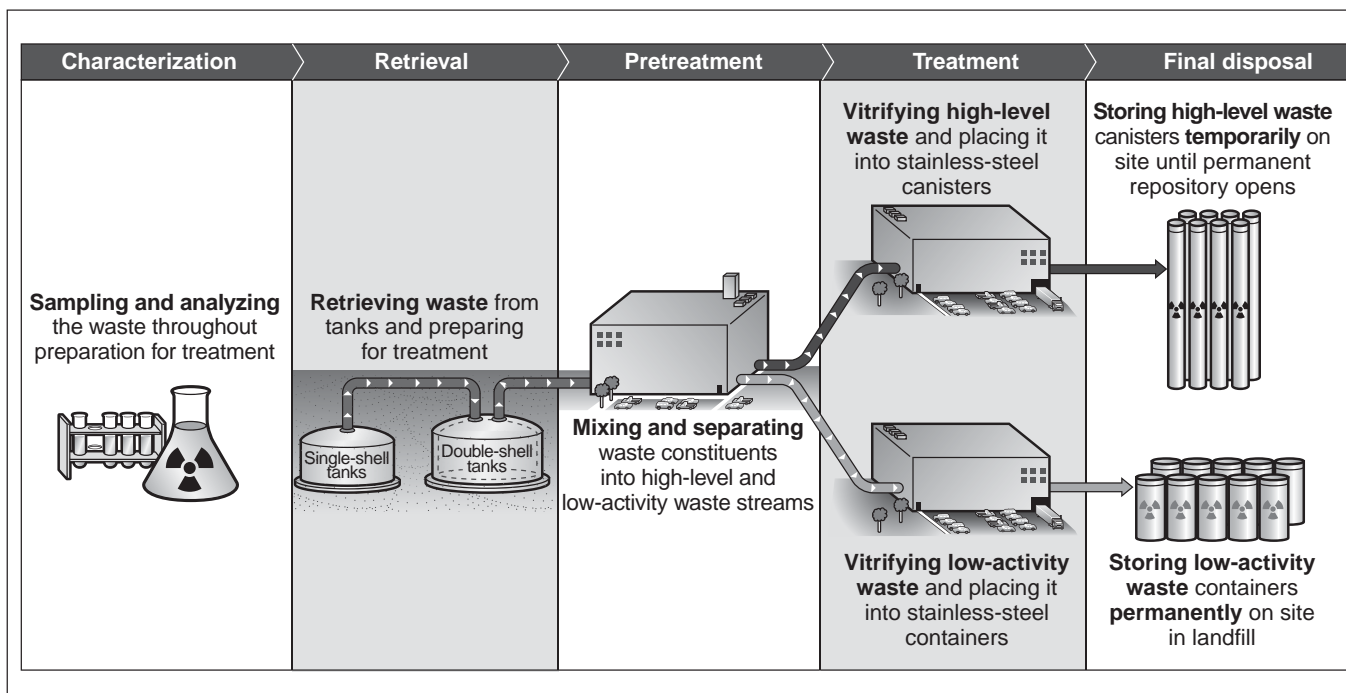
tanks at the rate of about one a year since 2003, finding the work to be more difficult than expected. The GAO report says Hanford will need to retrieve waste at the rate of five to seven tanks a year when the vitrification plant starts turning the waste into a stable glass form. If not, the plant will not be able to operate continuously and costs will rise.

Further, DOE's schedule targets have slipped, with end of treatment extending from 2028 to 2047, which increases overall operations costs. Overall the total estimated cost could significantly exceed DOE's current estimate of US\$ 77 billion, with estimates ranging from about US\$ 86 billion to over US\$ 100 billion, depending upon the date cleanup is completed. DOE has also fallen short in terms of risk-informed decision making. While DOE has analyzed risks in environmental impact statements required for its tank waste treatment activities at Hanford, it has not followed a systematic risk assessment framework, like one outlined in a 1983 report, updated in 2008, by the National Academy of Sciences. As a result, DOE cannot be assured that its present strategy is proportional to the reduction in risk that cleanup is to achieve. Some opportunities may still exist to reduce the costs of DOE's tank waste cleanup strategy, but the likelihood of success is unknown. For example, DOE is trying to increase the concentration of high-level

waste in each disposal canister, thereby reducing the number of canisters and possibly shortening treatment time frames. DOE could also work with regulators to demonstrate, on a tank-farm basis, the feasibility of leaving varying amounts of residual waste in tanks at closing without threatening human or ecological health. In removing waste from tanks, DOE has found that the last portion can be disproportionately difficult and costly to remove. Specifically, the cost of removing the last 15 percent of waste can equal or exceed the cost of removing the first 85 percent.

Cost escalation is the result of a range of issues, including the difficulties Hanford workers have had in emptying the leak-prone tanks of millions of gallons of waste, questions about how well vitrification plant technology will work and a decision not to send treated wastes to Yucca Mountain, Nev., for disposal, the report says. DOE disagreed with the increased cost estimate. It pointed out that GAO's predictions of cost and schedule problems at the Rocky Flats, Colo., nuclear site had not materialized. It also argued DOE has shown it could successfully treat radioactive waste at several of its other nuclear sites. But the report countered that DOE had not yet faced a tank waste challenge of the magnitude at Hanford, both in the volume of waste and the complex variety

Figure 2: Key Phases in DOE's Tank Waste Cleanup Strategy



Sources: GAO and DOE.

of chemical and radioactive elements that are mixed in the tanks.

DOE is legally required to empty 99 percent of the waste in the tanks or to empty each tank to the limits of technology before the tanks can be closed. But the report says, "More than half the experts we spoke with said that the 99 percent figure has no scientific basis, and several recommended that DOE conduct a comprehensive risk assessment of residual tank waste." As workers try to get the last waste out of each tank, the cost rises. "DOE has estimated that the cost of retrieving the last 15 percent of the waste can equal or exceed the cost of removing the first 85 percent," the report says.

The retrieved waste is planned to be treated at the Hanford Waste Treatment and Immobilization Plant for disposal. But DOE faces technical uncertainties, whether key treatment technologies at the vitrification plant will work, the report says. "Unless DOE successfully resolves

these uncertainties, it could face problems, such as facility shutdowns, facility modifications and retrofitting, or significant cost increases and delays in completing Hanford's tank waste cleanup activities," according to the report.

DOE is researching ways to make sure the vitrification plant will operate as planned, including by operating large test facilities with materials that simulate radioactive waste. If DOE can solve technical issues to allow more high-level waste and less glass-forming materials to be used to produce the glassified logs at the vitrification plant, the number of waste canisters and costs would be reduced.

However, there still remains the question of what to do with the glassified waste now that the Obama administration has ruled out sending it to Yucca Mountain. That means Hanford will need capacity for at least temporary storage of the treated waste.

Meanwhile, a helicopter equipped with radiation detecting equipment has been used to scan almost 4000 hectares of the Hanford reservation in search of radioactive rabbit droppings. The helicopter was able

to map each of the slightly radioactive stools with GPS coordinates. Rabbits developed an appetite for the radioactive caesium and strontium salts, leaking from the underground tanks. This resulted in slightly radioactive droppings. Use of the helicopter means that the droppings can be located and removed in a matter of days rather than the months that would have been needed for people to search for it on the ground. The droppings will be put into landfill at the Hanford site.

The September 30, report "Nuclear Waste: Uncertainties and Questions about Costs and Risks Persist with DOE's Tank Waste Cleanup Strategy at Hanford" can be found at: <http://www.gao.gov/new.items/d09913.pdf>

Sources: GAO Report Nuclear Waste: Uncertainties and Questions about Costs and Risks Persist with DOE's Tank Waste Cleanup Strategy at Hanford, 30 September 2009 / Tri-City Herald, 2 October 2009 / World Nuclear news, 9 October 2009

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GOALS MISSED

The original 1989 goal for completing the Hanford cleanup was 2018. It will be missed by decades.

	PREVIOUS GOAL	REVISED GOAL
Begin turning tank waste into glass	2011	2019
Single-shell tanks emptied	2018	2040
Vitrification completed	2028	2047

Note: Revised dates are approximate.

NEW BUILD IN HUNGARY: MORE QUESTIONS THAN ANSWERS

With a parliamentary decision in March 2009 that virtually gave green light for new reactors, Hungary has stepped on the same road as other former communist countries. The plans for building two large nuclear units (Paks 5-6) is the same case as it is in Bulgaria (Belene 1-2), Slovakia (Mochovce 3-4) and Romania (Cernavoda 3-4)(*1). The idea of these plans is originated in strategies from the seventies-eighties, which aimed to supply the fast-growing energy needs of the wasting heavy industry at whatever cost. The plans have nothing to do with recent industrial, economical, environmental, energy market and energy consumption patterns. This fact seems as if it does not bother decision makers, who are even willing to break the law in favour of new reactors.

(696.5986) Energia Klub - The March 2009 decision of the Parliament did not come out of the blue. The Parliament accepted the energy policy in April 2008 that ordered the Government to examine the possibility of building new nuclear units in the country. The order used a very general language (e.g. it did not define timelines) perhaps due to considering the sensitivity of the issue, but one should also take into account that the preparation of the energy policy was heavily influenced by the nuclear and natural gas lobbies, competing for the possibility of building large base-load capacity.

After the breakout of the economical crisis that affected Hungary deeply, no one believed that the plans of the nuclear lobby could come through soon. Nevertheless, it was only the underestimation of the irrationalism of politics. The prime minister Ferenc Gyurcsány, who had previously talked only once about new reactors in 2006 saying that a referendum must be held in the issue, hiding in its parliamentary speech on the management of the economical crisis in February 2009, announced that until 2020, two new nuclear capacity around 2000 MW will be built at the site of Paks.

The decision must have been a part of the entire Eastern European – Russian energy game. After the Russian-Ukrainian gas crisis of January 2009, the question between natural gas and nuclear was astonishingly rapidly decided in favour of nuclear. The prime minister, who had been described as a man with good connections in Moscow, did not make the decision against the Russian gas lobby for sure. It rather reflected to the change in the balance of

forces. As the result of the gas crisis, Vladimir Putin and Yulia Tymoshenko agreed to exclude the Ukrainian Dmitry Firtas from the Eastern-European gas business. As allegedly Firtas owned the company in Hungary that planned to build large base-load capacity on gas, it became clear that the company has no gas anymore.

The decision proposal was sent to the Parliament in the middle of March. One week later the prime minister announced his resignation. The governmental crisis threatened with the breaking up of the Parliament and holding new elections. This did not mean to be a problem, and the Parliament made 'perhaps it's most important decision regarding economy', as said by one of the members of the environmental committee. There were no obstructions: the economical and the environmental committees dealt with the issue around one hour each, while the plenary discussion took around 10 minutes, voting included. Finally, after only two weeks of parliamentary process, without any serious debate, 95% voted for new nuclear.

However, one could hardly believe that the members of the Parliament understood what they were voting for. The justification paper attached to the proposal was only one and a half page long, contained no specific information and referred only to one background paper, which clearly states that until 2025 there is no need for new nuclear capacity in Hungary. There was no information on basic questions: why 2000 MW? One or two units? What kind of reactors? How to insert modern, at least 1000-1200 MW reactors into the relatively small (with a peak load slightly over 6000 MW) Hungarian electricity

system that already has 2000 MW of inflexible nuclear capacity, and has no storage capacities, no sufficient border-crossing grid capacities? Where the uranium will come from, who will build and operate the power plant? And the ultimate question: who will pay the bill?

The official answer to these questions was that the permission by the Parliament is only a principal contribution that is required by the Atomic Law, and it is not a building permission. The permission is given based only on a not well-defined requirement of the Law, saying 'preliminary, principal contribution of the Parliament needed for the start of preparation activities concerning the establishment of a new nuclear facility'. Hence – they argued – the proposal does not have to contain detailed information, and even cannot contain them, as without this permission, the Government had not been allowed to make any steps.

This argumentation is false, of course. First of all, the Law, talking about extension of an existing nuclear power plant (such as Paks) with new units, clearly states, that the principal contribution is needed for the extension itself, not for some 'preparation activities'. Small, but important difference – the Government used the phrase established for a different situation, when an entire new nuclear power plant is to be built. Secondly, the state-owned Hungarian power distributor MVM (the owner of Paks) had been working on the issue for two years; hence much information had been prepared and made available for the Government, without the permission they referred. It can be clearly seen, that for an unknown reason, the Government in its decision

proposal perverted the decrees of the Atomic Law, for the sake of new reactors. That is why the Energia Klub appealed to the Court of Constitution to annul the decision.

However, the Court of Constitution has no timeline to make its decision on the issue. It is an unfortunate situation, as according to the news, the project has got a quick launch. Not only Paks and the MVM, but everyone else in the industry and other sectors, interested somehow in the project (companies, research institutions, universities, the Hungarian Academy of Sciences, consulting institutions etc.), has made formal or informal statements, backing the decision.

The already launched project is lacking transparency; even experts have stressed their fears about it. It is not a miracle: the decisions presumably will be made on political and not expert level,

with the exclusion of the public opinion. The lack of transparency serves the interests of the politics and the MVM, who has had good connections so far. The two main parliamentary parties, who virtually never agree in any question, moved arm in arm not just when they voted for the new reactors, but also in 2007, forming the rules of the liberalised electricity market in favour of the MVM. Among other preferences, this includes hidden possibility by which the MVM can put the financial burden of its investments on the electricity consumers before implementation. One can easily imagine a link between the MVM and the parties, considering the corruption scandal of the company this year, in which at least 55 million euros disappeared from the state-owned MVM through off-shore companies.

The situation could easily lead to the implementation of the original plans from the eighties, which contained two 1000

MW Russian VVER reactors on the Paks site, but never materialised. This would not only hinder, but make the implementation of sustainable solutions (energy efficiency and conservation, renewables) technically and financially unfeasible, which are fundamental for the already 75% energy dependent Hungary.

*1- See in details: Nuclear Energy: *Transferring Problems to Eastern European Countries, April 2008*, available at: <http://www.energiaklub.hu/dl/kiadvanyok/PPno4.pdf>

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IN BRIEF

U.K. wants to sell Urenco stake. The U.K. Government's stake in Urenco, which owns nuclear enrichment plants in Britain, Germany and the Netherlands, will be sold off to help to repay the country's escalating debt mountain, the Prime Minister announced on October 12. The plan to sell off the Government's one-third stake in Urenco could be the most controversial. The stake is controlled by the Shareholder Executive, which was created in 2003 to better manage the Government's performance as a shareholder in businesses. The other two thirds are owned by the Dutch Ultra-Centrifuge Nederland and German Uranit. Downing Street sources said that the sale would be subject to national security considerations, which could lead to the Government maintaining a small interest in the company or other restrictions placed on the sale. Meanwhile, the Dutch state took over the last 1.1% of the stakes in Ultra-Centrifuge Nederland, the Dutch part of Urenco, from private companies. Now, The Netherlands, owns the full 100% of the company. The Netherlands is not in favor of selling the uranium enrichment company to private parties.

The Times (U.K.) 12 October 2009 / Letter Dutch Finance Minister, 12 October 2009

Belarus: EIA Hearing new NPP. On October 9, a public hearing took place in Ostrovets, in the Grodno Region, on the question of construction of a nuclear power plant in Belarus. All the entrances to the cinema where the hearings were held got blocked by riot police and streets were filled with plainclothes police. Documents and leaflets critical of the EIA (Environmental Impact Assessment) were confiscated illegally, because of their 'doubtful' contents. Employees of state institutions were brought to the hearings by busses. Forcedly assembled audience was registered in advance, in violation of regulations. Many registered participants were however not let inside the building. Speaking was allowed only to state employees in favor of nuclear power plant construction, others were denied to speak. The denial was motivated by the fact that they supposedly have been registered too late. It is clear that the procedure of these hearings didn't meet the standards and therefore the results can't be recognized as independent. Russian expert in nuclear physics Andrey Ozharovskiy was arrested in the morning on a charge of disorderly conduct when he wanted to enter the building and handing out a critical response to the EIA. He was released only after 7 days in jail. Thus, the authorities showed their true face again - they are not going to let the dissident speak openly on the matters important to those in power.

Belarus Anti-Nuclear Resistance, 10 October 2009

Sellafield: Dramatic rise to discharge limit. Sellafield Ltd is expected to ask the U.K. Environment Agency (EA) for an almost 5-fold increase in gas discharge limit for Antimony 125 (Sb-125) so that the Magnox reprocessing plant can continue to operate. Sb-125 has a radioactive half-life of 2.75 years and emits beta radiation.

Disclosed in its Quarterly Report to the local West Cumbria Sites Stakeholder Group meeting scheduled for 1st October, the EA confirms that Sellafield wants the limit to be raised from its current level of 6.9 to Gigabecquerels (GBq) to 30GBq. The bulk of Sellafield's Sb-125 gas discharges arise during the de-canning (removal of the fuel's outer casing) of spent Magnox fuel,

particularly the higher burn-up fuel, in the site's Fuel Handling Plant prior to its transfer to the reprocessing plant. In early 2008 the Sb-125 discharge limit stood at just 2.3GBq but later had to be raised to its current level of 6.9GBq when the discharge chimney sampling equipment was found to be under-reporting. In October 2008 Sellafield Ltd indicated to the EA that, as part of its Periodic Review submission, it would be seeking to increase the limit from 6.9GBq to 11.6 GBq. In a spectacular misjudgment of its discharge requirements, Sellafield now needs to raise the limit to 30GBq to allow the de-canning and subsequent reprocessing of the larger volumes of higher burn-up fuel being received in the Fuel Handling Plant from UK's Magnox power stations.

Since 2007, processing higher burn-up fuel in the Fuel Handling Plant has led to Sellafield breaching its discharge Quarterly Notification Level on a number of occasions, and in late 2008 exceeding the site's internal trigger level. Subsequently, in April this year, as releases of Sb-125 from the Fuel Handling Plant threatened to breach the Sellafield site limit itself, Magnox reprocessing had to be abandoned for several weeks. Currently, the EA expects the current discharge limit to be breached again but is permitting Magnox reprocessing to continue – as the lesser of two evils.

The proposed increase in site discharge limit to 30GBq is unlikely to be authorized until April next year when approval from the European Commission, under Euratom Article 37, is expected to be given. Whilst the current limit of 6.9GBq is likely to be breached between now and then, it is understood that discharges of other fission products released during the de-canning of Magnox fuel in the Fuel Handling Plant, whilst also on the increase, will remain within their respective site discharge limits

CORE Press release, 30 September 2009

Ratings NEK downrated due to Belene. On 5 October, according to the Platts News Flashes, the rating agency Standard & Poor's Rating Services down rated the credit ratings for Bulgaria's dominant state power utility NEK from BB to BB- partly because of its involvement in Belene. The down rating "reflects our view of a weakening of NEK's financial profile and liquidity on the back of large investments and in the context of a deteriorating domestic economy," said S&P credit analyst Tania Tsoneva. The spending that NEK did "prior to the project's financing, coupled with large regular investments, have significantly weakened NEK's financial metrics". In November there will be an update of S&P's CreditWatch.

Email: Greenpeace, 6 October 2009

U.A.E. Passes Nuclear-Energy Law. On October 4, the United Arab Emirates issued the Federal Law Regarding the Peaceful Uses of Nuclear Energy. The law provides for "the development of a robust system for the licensing and control of nuclear material." Federal Law No. 6, which was issued by U.A.E. President Sheikh Khalifa bin Zayed Al Nahyan, establishes the independent Federal Authority of Nuclear Regulation to oversee the country's nuclear energy sector, and appoints the regulator's board. It also reiterates the U.A.E.'s pledge not to domestically enrich uranium as part of its plans to build nuclear power plants, the first of which is slated for commercial operation in 2017. The law makes it illegal to develop, construct or operate uranium enrichment or spent fuel processing facilities within the country's borders.

The bilateral agreement for peaceful nuclear cooperation between the U.A.E. and the U.S., or the 123 Agreement, could come into force at the end of October, when a mandatory 90-day period of Congressional review is expected to end.

Wall Street Journal, 5 October 2009

Uranium waste: Urenco transports to Russia stopped. A TV-report by the German/French-TV-station ARTE brought a new wave of media coverage concerning uranium waste transports from France and Germany to Russia. One of the positive results of the media interest: Urenco has confirmed that the UF6-transport from Gronau to Russia on 26 August was indeed the last one!

This is a major success for the joint campaign involving Russian, Dutch, French, Finnish, Swedish and German activists and organizations for the last three-four years. Thanks to this hard campaign the anti-nuclear groups have finally stopped this part of the dirty export of nuclear waste to Russia. Considering that they were up against several of the biggest nuclear players in Europe and various governments they have done very well!

But the same documentary, aired on October 13, made clear that France's energy giant EDF is still sending its uranium hexafluoride to the Seversk facility in Siberia, Russia. According to the 'Liberation' newspaper, 13 percent of French radioactive waste produced by EDF could be found in the open air in the town in Siberia to which access is forbidden. An EDF spokeswoman declined to confirm the 13 percent figure, or that waste was stored in the open air, but confirmed EDF sends nuclear waste to Russia. Because a small part (10-20 %) of the depleted uranium is sent back after being enriched to natural levels U-235, authorities claim it is not waste but raw material.

Reuters, 12 October 2009 / Email: SOFA Muenster (Germany) , 16 October 2009

Bad news for American Centrifuge Plant. On October 15, the U.S. Department of Energy (DOE) announced it could not support a program to prove USEC's centrifuge technology. The loss of US\$30 million (Euro 20 million) for the next financial year comes after the DOE's July decision to refuse USEC a loan guarantee to help it secure finance for the American Centrifuge facility at Piketon, Ohio. At the time the company said it would have to 'demobilize' the project, on which it had already spent US\$1.5 billion (see Nuclear Monitor 691, 16 July 2009, In Brief). The DOE placed USEC's application on hold and gave the company a chance to improve its application by proving the commercial viability of its technology. The DOE was to financially support a proving program with US\$30-45 million per year, starting in the financial year 2010.

However, the US\$30 million for the first financial year was recently denied by Congress during the appropriations process. And

in another piece of bad news for USEC it has emerged that a manufacturing fault in its centrifuges will mean several months' delay while replacement parts are made and the units rebuilt. In a statement, the DOE noted that the deal with USEC still stands to postpone review of its loan guarantee application until certain "technical and financial milestones are met," which would probably take six months even without the delay of rebuilding. The department noted that it had "worked closely" with USEC this year on its loan guarantee application, and had put an extra \$150-200 million per year into Cold War clean-up at an adjacent site managed by the company. This boost should lead to 800-1000 new jobs, the DOE said, which would offset the 750 jobs at risk on the American Centrifuge.

World Nuclear News, 16 October 2009

Jordan: site studies begin for Aqaba nuclear plant. On October 13, the Jordan Atomic Energy Commission (JAEC) launched environmental and feasibility studies for the location of the country's first nuclear power plant. It marked the first gathering of the implementing parties of the site-selection and characterization study, a two-year process that will examine the proposed site, located in the southern strip of Aqaba, nine kilometers inland and 450 meters above sea level.

Over the next three months, nuclear engineering and consultant bureau's, will determine whether the site, some 20km outside Aqaba city, will be suitable for the construction.

The JAEC selected Aqaba due to the abundant water sources of the nearby Red Sea and the proximity to infrastructure such as the Port of Aqaba and the electrical grid, the chairman said, noting that there are plans in place to establish up to six reactors at the site.

During the meeting on October 13, JAEC Chairman Khaled Toukan indicated that the JAEC is also considering a proposal to establish two power plants at the site simultaneously. The measure would decrease costs by 20 per cent through utilizing economies of scale, he added.

A week later Toukan announced that Jordan is coming up with 'strong results' indicating the country would emerge as a key exporter of uranium by the end of 2011. He made the remarks during a tour of the uranium exploration operations, which are being carried out in central Jordan by the French atomic energy conglomerate, Areva.

Jordan Times, 14 October 2009 / Deutsche Presse Agentur, 20 October 2009

French Polynesia: nuclear compensation very restricted. There was much praise in July when the French National Assembly approved a bill for compensating the victims of tests carried out in French Polynesia and Algeria over more than three decades. About 150,000 civilian and military personnel took part and many later developed serious health problems. (see Nuclear Monitor 686, 2 April 2009; In Brief) But now activists fighting for victims of French nuclear testing in the Pacific are stunned by conditions imposed in the compensation bill by France's upper house.

Roland Oldham, president of Mororua e Tatou Association, representing French Pacific nuclear test workers, said the actions of the upper house Senate reflected arrogance in metropolitan France towards its territories. He said the Senate has imposed strict requirements on applicants to prove their case on various grounds. The geographic zone from which claims would be considered had been greatly limited. The Senate had further rejected a bid by his organization - fighting for years for compensation - to be part of a compensation committee, which would now be only made of people nominated by the French Ministry of Defence. "It's the same people that have done the nuclear testing in our place, in our island," Mr Oldham said. "And finally, there's only one person decides if the case is going to be taken into account, (if a victim) is going to have compensation or not - and that's the Ministry of Defence. "For our Polynesian people it's going to be hard. A lot of our people won't be part of compensation."

Radio Australia News, 15 October 2009

Taiwan: life-time extension of oldest plants. State-owned Taiwan Power Company has asked to keep using the oldest nuclear power plant, Chinshan, operational since 1978 in a coastal area of north Taiwan, after the licenses of its two reactors expire in 2018 and 2019, the Atomic Energy Council said. The application is for extending the life of the plant's two generators from 40 to 60 years. Environmental activists voiced severe concerns about what they called a risky plan, also citing a shortage of space to store the nuclear waste. "We strongly oppose the measure. We cannot afford taking such a risk," Gloria Hsu, a National Taiwan University professor, told AFP.

Taiwan Power operates three nuclear power plants, while a fourth is being constructed.

AFP, 21 October 2009

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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