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## FLAMANVILLE EPR CONSTRUCTION SUSPENDED

**Greenpeace has learned that the French nuclear safety agency, ASN, has ordered construction suspended on the concrete base slab of the new European Pressurized Reactor (EPR), Flamanville 3, in northern France. The EPR would be the world's largest reactor and has been presented as the 'flagship' of a supposed international nuclear renaissance. Flamanville's construction has run into the same kinds of problems plaguing ongoing construction of the only other EPR, Olkiluoto 3, in Finland.**

**(673.5871) Greenpeace** - The move by ASN follows the agency's discovery of chronic problems affecting the quality of construction work since building work commenced on Flamanville 3 in December 2007. "The French government should face facts: the European Pressurized Reactor is a failed experiment," says Jan Beránek, nuclear campaigner at Greenpeace International. "It is a dangerous roadblock in the way of safe solutions to energy security and climate change. In order to avert catastrophic climate change we need an energy revolution based upon clean renewable energy sources and energy saving."

ASN's call to halt construction follows a series of letters from the agency to Flamanville's construction manager. In the letters, ASN inspectors highlighted a range of problems including non-conformities in the pinning of the steel framework of the concrete base slab, incorrectly positioned reinforcements, inadequacy of technical inspection by both the construction companies and Electricité de France (EdF). Inspectors also uncovered inconsistencies between the blueprint for reinforcement work and the plan for its practical implementation. The incorrect composition of concrete had been used, that may lead to cracks and rapid deterioration in sea air conditions. Samples of concrete were also not collected properly, according to ASN. Cracks have already been observed at part of the base slab

beneath the reactor building. The supplier of the steel containment liner reportedly lacks the necessary qualifications. Fabrication of the liner was continuing despite quality failures demonstrating the lack of competence of the supplier. As a result, one quarter of the welds of the steel liner of the reactor containment building were deficient.

"ASN's decision is extremely important. We are pleased EdF will have to explain what is happening," said Yannick Rousselet, energy campaigner at Greenpeace France. "Experience with the EP's in France and Finland proves that nuclear power is too risky, too late and too expensive. France and Finland must abandon the EPR now."

Problems at Flamanville echo those with the first EPR, Olkiluoto 3, being built in Finland. Olkiluoto has been under construction for three years but has been blighted ever since the concrete was poured. Poor quality concrete, bad welds on the containment liner and low-quality reactor components are among its problems. The schedule for completion has been put back by more than two years and costs have nearly doubled to over Euro 5 billion.

**Source:** Greenpeace press release, 27 May 2008

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# SWEDEN: RADIATION PROTECTION AUTHORITY FAULTS FUNDAMENTALS IN KBS REPOSITORY SCHEME

May 16, the Swedish Radiation Protection Authority, SSI, filed its comments on 'Fud 2007' (1), the most recent progress report to come out of the Swedish nuclear power industry's 'Fud' program to develop a final repository for high-level waste, irradiated nuclear fuel. (2) The comments, surprisingly critical, focus on basic components in a 'system' that has been touted as the world's first feasible scheme for isolating nuclear fuel waste for the period of its radio-toxicity, i.e., hundreds of thousands of years.

(673.5872) WISE Sweden - The most devastating criticism in SSIs report relates to the nuclear industry's program for low- and medium-level waste. (A sample: SSI sees "no comprehensive and complete program for the measures that will be needed to decommission and dismantle Sweden's nuclear power plants" (p 11 of the report), and "In some respects they don't even live up to what the law requires" (SSI's spokesperson in an interview on Swedish Radio). Nonetheless, the focus here will rest on KBS-3, the scheme for storing high-level waste, irradiated nuclear fuel - mainly because it is best known outside Sweden, thanks to the industry's marketing efforts.

SKB AB, a company jointly owned by all Swedish nuclear operators, has been planning to submit its application to build a final KBS repository for high-level waste to the Environmental Court in late 2008. Now, the timetable has been extended roughly nine months. Some experienced observers believe there may now be a delay of a year or two, perhaps longer.

The KBS scheme has been about 35 years in the making. It foresees depositing fuel waste in bedrock at depths of 400-600 meters. At the time the scheme was conceived it was believed that the bedrock in much of Sweden - a shield zone - was dry. That may or may not be, but over the years strong local opposition to the siting of a final repository nearby narrowed the choice of location to two coastal sites, both adjacent to nuclear power stations that employ many local residents. The bedrock in these two candidate sites is far from dry; the coastal location also involves a high probability of massive infiltration of saline and/or oxygen-rich water (particularly in one or more post-glacial periods) during the lifetime of the

repository.

A second factor that has changed the setting around the KBS scheme is the introduction in 2002 of an Environmental Code in alignment with EU environmental law. One of the principal differences that the Code entails is that the risk analyses and environmental impact statement (EIS) will be submitted to an Environmental Court, not the regulatory agency. Another is the requirement of comparative analyses to ensure the choice of 'best available technology' (BAT). The change came late in the KBS scheme's history, and the regulator, the Reactor Safety Inspectorate, seems to have failed to impress on SKB AB that compliance with the letter of the law would be an absolute requirement (see Monitor 652, February 8, 2007: '*Sweden: Nuclear challenge to Environmental Code fails*').

## Serious gaps in elaborate scheme

"... SKB's documentation is not sufficient for SSI to be able to determine that the program for a final repository for irradiated nuclear fuel is suited to its purpose... ."

So reads SSI's press release announcing the report. The rest of the sentence expresses doubt that the gaps can be filled within the next couple of years.

SSI's criticism principally revolves around three factors:

- (1) the feasibility of the scheme in a wet environment,
- (2) the shift to popular acceptance as the prime criterion in siting, and
- (3) SKB's failure to consider and evaluate alternative methods.

SSI is also concerned about SKB's heavy reliance on numerical modeling, based on limited empirical knowledge, when it comes to assessing the long-term consequences of a KBS repository

in the biosphere.

## Copper is not gold

The KBS scheme involves natural and man-made barriers. The man-made barriers consist of copper canisters surrounded by a bentonite clay buffer. The hydrogeology of a coastal site is a worry, with regard to both the clay and the possibility of corrosion.

When it comes to research needs SSI urges more attention to the risk that the clay buffer may erode - either due to physical flows or as a consequence of chemical reactions - and the radiological consequences of various degrees of erosion (in a worst-case scenario, the risk of criticality). SSI points to the need for empirical materials testing, but also to gaps in the company's conceptual understanding of the processes at play.

For years, SKB AB has assured the environmental movement that copper would not corrode in an oxygen-free environment. Copper was virtually as durable as gold, they said. But two factors raise major doubts about those assurances: First, aquiferous bedrock at the depths planned is not likely to remain oxygen-free. Second, recent research has found evidence of copper corrosion in anaerobic environments, as well. Another new scientific finding is the activity of microbes in deep bedrock and highly inhospitable environments. Sulfide produced in microbial processes is a new concern that needs to be followed up.

## Acceptance more important than geology?

As noted above, SKB met local resistance when it first started 'prospecting' for a suitable site. One after another, prospective sites had to be abandoned. (The Swedish Constitution gives local government the

right of veto over physical planning and land management.)

Geologists and the environmental movement have pointed out that the two candidate sites - near Forsmark and Oskarshamn reactors, both on the Baltic - are areas of groundwater outflow. They point out that zones of inflow do exist, and if containment of possible leakage is a concern, zones of inflow are definitely preferable. The Swedish environmental movement has also criticized the concept of the Baltic Sea as an "appropriate recipient" of discharges (planned and unplanned) from nuclear installations - a view even SSI held some years ago - and opposes a coastal siting for that reason, as well.

SKB has been unwilling to follow this advice and start the search anew. That leaves the company in a weak position vis-à-vis the coming application and EIS. How can SKB AB show that they have chosen the optimal site? At a recent EIS consultation SKB was asked whether the initial criteria for the choice of site (dating from the mid-1970s) would be included in the EIS. The company spokesman answered, "No. They are quite irrelevant."

### What about deep boreholes?

Two principal alternatives to the KBS-3 scheme have been on the table for rather many years. (3) One is Dry Rock Deposit, the other deposition in deep boreholes (at depths of 3-5 km). The DRD concept has been rejected out of hand, as it requires active surveillance and therefore cannot be considered a final solution. (SKB AB and the authorities seem to be of the same mind on that point.) In the case of deep boreholes, however, SKB AB has ignored SSI's urgings.

The KBS-3 scheme does not provide for retrievability. Neither do deep boreholes. The advantage of the deep borehole approach is that it relies on robust natural barriers. Groundwater mobility at such depths is significantly less than near the surface; and the sheer distance to the biosphere gives added security. Furthermore, deeper down, stagnant pools of heavy, stratified saline groundwater are believed to have remained intact for hundreds of

thousands of years. Deposition of waste below such pools would further reduce the upward mobility of possible leakage from a repository.

Naturally, there are many aspects of the deep borehole method that need to be explored. But SKB AB has been totally unwilling. In 2000, when authorities asked SKB to look into the alternative, the company claimed that it would take 30 years and some four billion Swedish crowns, over 400 million euro (SKB R-00-28) - which most regard as a gross exaggeration. As late as 2007 the Directors' Action Plan included the following declaration: "One objective is approval of the [Fud] program in its present state and without demands for major complements, like the deep borehole alternative, for example."

SSI cannot entirely contain their frustration over SKB ABs neglect of the deep borehole alternative and now, once again, reminds SKB of the formal requirement of a systematic comparison between deep boreholes and KBS-3 that SSI imposed years earlier. No determination of BAT or the optimality of SKB's proposed solution can be made without it, SSI notes.

### Reality check!

First of all, it should be noted that SKB AB started its biosphere research only a few years ago.

SSI points to four principal faults in the methodology applied:

- It leads to a 'dilution' of radiation dose estimates.
- Relevant natural nuclide transport processes are missing in the models presented.
- The empirical validation of the models is weak or non-existent.
- There is no analysis of uncertainties.

The report dwells on gaps between various models and the linking of models without specifying the underlying assumptions. Particularly the consequences of one or more glacial cycles are in dire need of further research. One might forgive a comparatively young research area for its inconsistencies. But the gaps in knowledge and understanding become potentially dangerous when coupled to a heavy reliance on numerical modeling.

**Will SSI's comments reach the**

### Government?

All in all, SSI's is an extremely critical assessment. Vital elements in the KBS-scheme have not been sufficiently penetrated, and SSI calls upon the Government to instruct SKB AB to fill in the gaps.

Two things are remarkable about the present situation. One is how a well-financed (and, ostensibly, closely regulated) company like SKB AB could find itself so far off base so close to the completion of a 30-some year old R&D project.

Secondly, one would think that when a nation's radiation protection authority expressed itself in such unequivocal terms, there would be some corrective action. In Sweden this cannot be taken for granted. The formal procedure for comment on the final repository project is that the Radiation Protection Authority (SSI) reports to the Reactor Safety Inspectorate (SKI), who in turn reports to the Government. (SKI will submit its report June 26.)

MKG, one of the environmentalist organizations involved in the EIS consultations, has undertaken a thorough reading of all comment filed in the past. They found that on at least one occasion SKI withheld criticism on the part of SSI from the Government. At a consultation May 28, MKG asked a representative of SKI whether SSI's critique and recommendations will be passed on to the Government. She declined to answer.

### Notes

- (1) SSI. *Avd. för teknik och avfall. SSI:s yttrande över SKB:s Fud-program 2007* (Dnr 2007/2969-26). Available in Swedish at [www.ssi.se](http://www.ssi.se).
- (2) 'FUD' stands for Research, Development and Demonstration.
- (3) Both the two umbrella organizations made up of environmental groups have the position that more information is needed on alternatives. For information on dry rock deposit and deep boreholes see [www.nuinfo.se](http://www.nuinfo.se) - The Nuclear Waste Management in Sweden Document Archive.

**Source:** Charly Hultén, WISE Sweden

**Contact:** For more information about these developments and comment on Fud contact Miles Goldstick, Milkas ([info@milkas.se](mailto:info@milkas.se)) and Johan Swahn, MKG (+46 31 711 00 92; [Johan.Swahn@mkg.se](mailto:Johan.Swahn@mkg.se)). At this writing SSI had not produced any information on their findings in English.

# NUCLEAR EXPANSION FROM SOUTH AFRICA INTO THE REST OF AFRICA

**The South African coastline first, then much of the country is being earmarked for massive expansion of nuclear energy -- in a country blessed with sunshine and all the means for viable alternative energy. This means the government wants to start on the Cape coastline with 5 PWR nuclear reactors then countrywide 12 to 15, and between 24 and 36 PBMR nuclear reactors starting with an untested experimental PBMR model near the country's only existing Koeberg nuclear power stations. It then aims to export 165 MW PBMRs - based on old German technology modified by South African scientists - throughout Africa, Brazil and India or wherever it can.**

**(673.5873) CANE** - These lofty nuclear ambitions for a country besieged with political and social problems and a dearth of skills, have also placed the country in the grip of an energy crisis as it held back on energy developments while the aging Koeberg station was shut down countless times over the past number of years resulting in rolling blackouts. Government and its power utility Eskom now stand accused not only of mismanagement but also of deliberately manipulating the electricity crisis to push ahead undemocratically with nuclear power amidst growing opposition.

Simmering in the background since the days of apartheid, the government's nuclear agenda crept up on South Africans without any meaningful discussion or, as activists point out, without any democratic mandate. Despite repeated calls for an all inclusive Energy Summit, none was held except by invitation-only by the nuclear industry itself. The "nuclear and uranium renaissance" was widely announced to the public through industry "summits" during 2006/7 and culminated in a Draft Nuclear Policy document issued by the Department of Minerals and Energy (DME) for public comment last October.

After the nuclear bombs made in South Africa were dismantled and its uranium enrichment plant closed, the fledgling democracy which came to power in 1994 following a protracted freedom struggle supported by numerous foreign governments and appeared to be backing off nuclear power. This is anything but the case. In fact, the country's nuclear agenda is now widely touted as a Presidential Project of Thabo Mbeki and a handful of powerful and all the more autocratic Ministers

facing the end of their term of office amidst growing dissent from their own ranks and hell-bent on establishing what they see as scientific prestige to the black-ruled tip of Africa.

Rising prices of uranium are not least of the reasons for this determined thrust. The Nuclear Energy Corporation of SA (NECSA) has been widely touting South Africa's uranium resources which it wants again to enrich, with the result that many parts of the country is now either being prospected or mined for uranium. And, although Intelligence Minister Ronnie Kasrils discussed the restart of the nuclear weapons program at a briefing in 2006, officials say they intend to stick to the Non-Proliferation Treaty.

In order to fast-track the nuclear and uranium agenda, the South African Parliament has been amending several environmental laws once deemed the most progressive in the world, most notably the National Environmental Management Act and the Minerals and Petroleum Development Act essentially to by-pass public participation and public accountability. From a seemingly open approach around the turn of the millennium, the nuclear industry also reverted to old-styled secrecy and refuses to answer even the most basic of questions on issues such as nuclear liabilities and third party insurances.

Already the power utility Eskom is in negotiations with nuclear companies and foreign government tendering and jostling for position, notably the French government after French President Nicolas Sarkozy's state visit to South Africa this year through Areva, Toshiba, Westinghouse and Candu among others. In May Mitsubishi announced it was considering a stake in the PBMR.

South Africa has formed an alliance, among others, with India and Brazil seeking to form "Southern Hemisphere powerhouses" known as the India, Brazil, South African Dialogue Forum (IBSA), and has signed agreements with Russia. This includes nuclear co-operation and presumably also South Africa's intention to use uranium downgraded from old Russian nuclear warheads to fuel its PBMRs and now also a satellite deal.

While the government remains determined against all costs on the nuclear option for South Africa, nuclear power has undermined action on climate change and deprived the country of renewable energy solutions with many innovators having to turn to other countries to market their breakthrough technology.

Yet South Africans are being leapfrogged into nuclear energy whilst the agendas of Eskom and its nuclear industry under the auspices of a 'Presidential Project' run through mouthpieces at Eskom, Minerals & Energy, Public Enterprises and the media remain non-transparent, unaccountable and at loggerheads with the concept of public participation. The advantages of renewable energy (RE), in particular the huge potential that industry offers in much-needed job creation and a speedy solution to the current energy crisis has been deliberately ignored on any meaningful scale. When RE is scaled up to utility size, the rewards & benefits will be so apparent that plans for nuclear developments will be permanently sidelined. But while it clings to power and agenda for the remainder of its tenure, the current government continues to dig in its heels expecting to irreversibly re-establish the country's

nuclear industry before the 2009 elections. The much touted PBMR, it hopes, will then be foisted on other African countries reliant on South Africa for electricity since there are no other takers.

What is about to join this scenario in South Africa are radioactivity-emitting nuclear waste smelters, nuclear fuel factories and uranium enrichment plant at Pelindaba near Pretoria, radioactive waste dumps in the Namaqualand in the Northern Cape and at each installation (some already dangerously overflowing with nuclear waste), and deadly releases into the air and thus the environment despite a National Nuclear Regulator (NNR) being ill-equipped to cope and several necessary laws not yet in place. Laws that deal with, for example, safety regulations or waste management have not been finalized. No budgets have been set aside for the clean-up bill, decontamination or long-term radioactive waste management.

Already on the brink of a water crisis, this water-intensive industry (which is also energy intensive) will place additional threats on scarce water resources - inland water courses, wetlands, rivers etc and sea water which supply the nuclear process. The detrimental effects of rising temperatures and radiotoxic effluent on the ocean and its sea-life are well documented elsewhere in the world. A report by the Nuclear Information and Resource Service (NIRS) and the Safe Energy Council (SEC) shows how many US nuclear power plants kill large numbers of marine wildlife, including endangered species, as a result of their cooling systems.

There are already 53 radioactivity contaminated sites in this country, officially recognized by the National Nuclear Regulator (NNR). Without naming one site, the NNR recently told Parliament it lacked the skills to cope despite admitting these sites pose a hazardous threat to people - for generations to come. It is for very good reason, based on credible peer reviewed research, that uranium mining has been banned in many areas of countries like Ireland, Canada, Australia, and certain states in the USA. Yet the financial rewards for mining it

remain a driving force.

Now finally out in the open after years of warnings, is the ecological radiotoxic disaster on the West Rand near Johannesburg after 120 years of gold-mining where uranium has been extracted as a by-product - only one of the locally contaminated sites. There is no longer doubt over the effects of uranium mining on water, the food chain and humans. Children on the West Rand have been diagnosed with genetic deformities and a range of cancers is on the increase. Robinson Lake, for instance, an unlined dam with faults and fractures, is a declared radiation area with uranium levels 40 000 times above background. The greatest focus in this regard is undoubtedly the Cradle of Humankind World Heritage Site which includes the home of Mrs Ples (considered to be 2.15 million years old) in the Sterkfontein Cave system and the foreseeable collapse of the N14 highway. Of no lesser concern, however, are the downstream residents and agricultural activities that are largely or wholly dependent on groundwater for potable and business use. Many of them remain ignorant of the imminent danger upon them.

There remains no credible clarity on the historic social or environmental injustices perpetrated by the local nuclear industry on populations - particularly the poor, nuclear workers or uranium miners. Since 2004, about 500 seriously ill former NECSA workers approached the environmental group Earthlife Africa seeking help on compensation for exposure to radiation and other occupational diseases they believe they contracted on the job. Workers around Koeberg and the Vaalputs nuclear waste repository in the Namaqualand also want health studies done. Around 1999, the erstwhile Council for Nuclear Safety estimated that at least 10,000 mineworkers, or roughly one in 20 mineworkers, have been exposed to radiation levels that exceeded safety limits. The full extent of the problem - including on surrounding communities - has yet to be dealt any degree of independent transparency with NECSA consistently denying any of its workers were nuked.

Reasoned objections to an expansion of the nuclear program on the basis of

economic considerations in a country in need of poverty alleviation, job creation and energy provision have also been flagrantly disregarded. The industry worldwide is known for massive cost-overruns, lengthy delays and is subsidized by taxpayers, yet these facts have left the South African government cold.

The PBMR project - to which NECSA and Eskom are aligned - has been government-funded to the tune estimated to be over R5billion (US\$647 mln or 415 mln euros) with almost nothing to show for it after 10 years. The PBMR failed its first Environmental Impact Assessment (EIA) process, but has started again with a larger output of 165MWe, because the earlier design was found to be uneconomic, anyway. The revised design therefore remains completely untested and unlikely to proceed beyond a R20-billion demonstration unit at Koeberg -- despite Eskom's "order" of 24 units -- because there are no buyers anywhere in the world. Its licensing process is currently under suspension because NNR found it did not meet safety requirements.

"There ought to be a proper forensic audit conducted into the PBMR Company to ascertain what this money has been spent on and whether it is economically feasible to keep funding a project that not one international investor has put money into and which an international panel of experts said was financially risky. If we had rather invested that money in renewable energy sources we would have been able to avoid the crippling energy crisis that we now face. Instead, Eskom is blackmailing the South African public into accepting a 60 percent increase in electricity tariffs, which will impact most heavily on the lives of the poor." (Quote Lance Greyling, ID MP, to Parliament at Public Enterprises Budget Speech, May 2008)

The full extent of funding now thrown into various aspects of the nuclear development plan is still not known.

Eskom tenders have gone out to only two consortiums to build a nuclear power station that will cost in excess of R120 billion and will only be completed

in 2016. In fact, it will probably be later than 2016 and cost a great deal more given the Finnish experience, where Areva - the same company involving itself in South African affairs - is way behind on its construction of a nuclear plant and costs are spiraling - the flagship of the so-called "nuclear renaissance". (more on PBMR program and costs: Nuclear Monitor 655, 3 May 2007)

It has been the practice for almost half a century in this country, for so-called low level radioactive waste (LLW) to be discharged into the Crocodile River by NECSA at Pelindaba, and into the Atlantic Ocean from Koeberg. Authorities cling to the ALARA (or As Low As Reasonably Achievable) "internationally acceptable" standards overruling calls for a precautionary approach which accepts that no dose is a safe dose of radiation.

So-called "accidents and incidents" not always made public, have plagued nuclear operations. Farmers' Weekly this January exposed a Fauna and Flora official Abré Steyn's battle to have investigated the radio-toxic contamination of the Crocodile River that resulted in "knee-deep" dead fish and birds in the 1990s probably even before, in 1999, NECSA "inadvertent discharged" 242 million liters of radioactive liquid waste into the Crocodile River. By 1999 activities at Pelindaba had been so scaled down that most people believed it was closing down! There have been "leaks /spillage's /excessive discharges or accidents" involving for example, leaks from Pelindaba's aging Safari Nuclear Reactor, the "Radiation Hill" scandal of the mid-90s when High Level Liquid Waste was found to have been leaking from drums and still poses a threat to aquifers that supply household boreholes.

At the aging Koeberg nuclear power station, according to Earthlife Africa, there are serious concerns about the safety of "an excessive amount" of high level radioactive waste stored in cooling ponds onsite, "far beyond what the system was originally designed to manage." ELA said "it seems possible that this waste is not properly contained and that waste pools have essentially

become another reactor...Eskom has failed to respond to warnings and has failed to test vital equipment for periods of up to ten years."

We pose the question; if it has been unable to secure and maintain proper maintenance and operating procedures at the current existing nuclear installations, how would ESKOM and NECSA intend to do so for the proposed additional stations all over the country?

In order for its energy policy to claim that it is both national and of the people, government would need to provide sufficient notice and invite civil society organizations and communities active in the energy sector to a genuinely consultative process. There is now growing realization for this by labor, environmental and faith-based organizations. Such a process should be open and transparent, with a program that reflects the full range of energy topics that affect South Africans today. These calls were made again during the public hearings in May of the National Energy Regulator (NERSA) to assess Eskom's application for a 60% increase in the electricity tariff which affects largely domestic consumers since mining, industry and neighboring states buy South African electricity for lower rates.

Calls have also gone out for an examination by an independent commission of inquiry of all deals that include foreign companies such as Areva, Westinghouse, Toshiba, uranium companies and foreign governments which have overridden democratic energy policy development. And a baseline independent study that must compare ALL costs of nuclear with renewable energy power generation including capital costs, costs of state subsidies, taxpayers cost of dealing with radioactive waste, inadequate liability insurance that places risks of disasters on the public, ongoing fuel costs, costs of security both inside and outside nuclear facilities, radiation health hazards to workers and the public at large of both uranium mining and nuclear power plants, potential risks, potential benefits of Carbon Trade Credits .

Realizing the dangers nuclear expansion and uranium mining pose to people and the environment, environmental and community-based groups, NGOs, and scores of individuals, academics, unionists and clergy in South Africa formed the national Coalition Against Nuclear Energy (CANE) last August. It was officially launched in Bloemfontein in April. CANE is united in the single aim of stopping nuclear expansion.

CANE represents a groundswell of ordinary people and concerned organizations facing radiation in their backyards who want government to act democratically in seeking alternative solutions for the energy and climate change crisis. The more organizations and people sign on, the faster the media and politicians will get the message and find sensible solutions to the energy crisis.

Next year is an election year and -- if the new government supports the nuclear industry for another eight years -- we will be stuck with significant debt for years. The coming months are therefore crucial in terms of whether the nuclear issue becomes an election issue or not, and whether the powerful Congress of South African Trade Unions (COSATU) together with the South African Communist Party (SACP) which are aligned to the ruling African National Congress (ANC) will force the issue.

CANE cannot do this alone and needs (financial) support for our struggle in South Africa to convince our decision makers that they've not been given the full story:

(This article is shortened by WISE Amsterdam. The complete article and a list of footnotes is available from [wiseamster@antenna.nl](mailto:wiseamster@antenna.nl))

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# EUROPEAN NUCLEAR ENERGY FORUM - NO TABOOS

One week ahead of the European Nuclear Energy Forum (ENEF) in Prague, Energy Commissioner Andris Piebalgs asked in his blog for people to send him their comments on nuclear energy. In no-time he received over a hundred original comments pro- and contra nuclear power. From those comments, any statistician can merrily conclude that the status-quo lies still at 20% in favor and 80% against nuclear.

## (673.5874) Friends Of The Earth

**Europe** - How different was the mood at the ENEF, held 22-23 of May. About three hundred participants from industries, regulators, politics and NGO's spend two days praising themselves and their proclaimed nuclear renaissance. For two days, the broad opposition in society against nuclear power seemed not to exist.

The European Nuclear Energy Forum is one of three European bodies which have been set up in 2007 to discuss a host of aspects of nuclear power. Besides the ENEF, the two other bodies are the "High level group on safety and waste management" (HLG), and the "Sustainable nuclear energy technology platform" (SNE-TP).

For years, it has proven impossible to come up with one common European position on nuclear, supported by every European member state. This is why the European Council (the national governments) and the Commission "outsourced" the contested issues to the newly set-up non-governmental forums. The expectation of course being that difficult issues will be tackled there. When the forums are able to appease opposing parties and solve outstanding issues, possibly "Europe" could use the conclusions to get European nuclear policy out of the deadlock.

The HLG, which represents the national nuclear regulators, deals with radioactive waste. It should come up with a common position on the harmonization of reactor safety guidelines. The SNE-TP is a forum with basically everyone who has an interest in the technological development of nuclear, and with moral, but expressly no financial support from the European Commission. It deals with the technological development of nuclear, especially Generation IV fast breeders (hence *sustainable*). The ENEF, which deals with more political issues, brings all these actors together, plus more, but

still without a formal mandate. But everyone understands that while the ENEF is being presented as "A structured and open debate, without taboo, [...] among high level representatives from the nuclear industry, power companies, energy intensive consumers, finance and civil society, as well as other key decision makers and organizations at national and EU level", its conclusions will not be swept aside.

The ENEF is jointly organized by the Slovak and Czech governments, and nicknamed the Bratislava/Prague Forum, similar to the Amsterdam forum on sustainable energy, the Madrid forum on gas, or the Florence forum on electricity.

The first meeting of the nuclear energy forum was held in November 2007 in Bratislava, Slovakia. There it was agreed to set up working groups on risks, transparency and opportunities. Between November and May the working groups met several times and the results of their deliberations were presented to the second ENEF in Prague.

The risks working group discussed the harmonization of safety regulation. The majority of the working group members pushed for an EU wide recognition of the WENRA nuclear safety guidelines as basis for European regulation. WENRA (Western European Nuclear Regulators' Association) groups together the heads of nuclear regulatory bodies from 17 European countries. Patricia Lorenz, participating in the working group for Friends of the Earth Europe, opposed this. She demanded that if there would be discussion about harmonization on European level it should be on the highest standards: BAT (Best Available Technology) and BRP (Best Regulatory Practice). A similar discussion went on around issues of waste storage and the development of new technologies.

The process in the working group "the opportunities of the nuclear industry" was not much different. The lead for the formulation of proposals was taken by the nuclear industry European lobby group Foratom. One of their proposals was already wiped from the table, after which the group proposed to make a SWOT analysis of the competition situation of nuclear power, using criteria such as "fatalities / GWh", "used surface / GWh", and "tons of waste / GWh". Jan Haverkamp, the Greenpeace representative at the working group, stated this as preposterous, and put forward that in case a SWOT analysis (a strategic planning tool used to evaluate the **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats) is to be made, it should be made on the basis of policy options leading to different energy mixes. In the opportunities working group there was a strong push for streamlined licensing and financing schemes for new nuclear built.

The last working group of the forum deals with transparency. The industry representatives in the group (who, by the way, consider "the amount of information available on their activities [to be] quite superior to that provided by other industries") largely reiterated their conviction that the public opposition against nuclear can easily be overcome by opening up nuclear facilities to the public (e.g. the possibility to visit certain parts of nuclear plants in the form of organized tours). Haverkamp called this a complete "chotspe". "The public concerns are well known and cannot and should not be addressed with PR exercises, but with genuine reflection of those concerns in the daily praxis of the nuclear industry as well as EU energy policy. These concerns focus on nuclear safety, nuclear waste, proliferation, cost, governance and transparency, including democratic control - such concerns cannot be met with excursions", according to Haverkamp. Another topic under discussion was how

to apply the Aarhus convention on transparency to the nuclear sector.

The organizers invited around three hundred people for the ENEF. Most participants had some kind of interest in nuclear. Only three representatives from environmental organizations were invited; two from Greenpeace and one from Friends of the Earth Europe. Both environmental organizations giped to the total pro-nuclear bias of the forum, especially as it is presented as *the* stakeholder forum for nuclear energy. They pointed out that the majority of Europeans oppose nuclear power, and trust NGO's to convey their concerns. However, the current ENEF configuration did not at all reflect this state of affairs.

Instead, the ENEF was being used as a platform by many politicians to deliver their support for nuclear. Commission President Barosso: "Nuclear energy has a role to play in meeting our growing concerns about security of supply and CO2 emission reductions", the

Lithuanian and Slovakian prime ministers snivelled that they agreed to close their soviet style nuclear power plants in 2009. Of course the industry used the opportunity to call for fewer rules on nuclear safety.

The expectation was that the working groups could present their reports to the ENEF in Prague. However, all three groups, risks, opportunities and transparency, had to decide that their topics need further discussion and that the (draft) reports did not yet properly reflected the processes in the entire working groups. Several working group chairs already talked big about majority opinions in their working groups, but due to the unbalanced representation, this doesn't mean much. The next opportunity to reach consensus will be again in Bratislava, in November.

The ENEF was launched as an attempt to find a way out of the European nuclear deadlock. Not surprisingly, this way out is not found after two sessions. It is worrying that the forum is being

presented as the stakeholder meeting which it currently is not. Now we have to rely on Greenpeace and Friends of the Earth to prevent nuclear from being groomed through for the European machine. Of course it doesn't harm to discuss nuclear without taboos, but the ENEF aim is to push nuclear through, without a real commitment to address concerns.

Despite the nuclear spin the ENEF is generating, the environmental groups are doing a good job when they are able to prevent biased working group report from being completed. But if they loose - or are weakened - in this ability, they should get out of the process as soon as possible, to prevent their presence being used as a pretext for pushing dangerous European nuclear regulation.

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## EBRD: MORE MONEY FOR NEW CHERNOBYL CONFINEMENT

**The European Bank for Reconstruction and Development (EBRD) has agreed to donate 10% of its profits for 2007 to support international efforts to clean up the site of the Chernobyl nuclear power plant in Ukraine. Following the annual meeting of the bank in Kiev, the EBRD's president, Jean Lemierre, announced that some EUR135 million (\$212 million) of the bank's 2007 profit of EUR1.1 billion (\$1.7 billion) had been allocated to the clean up of Chernobyl.**

**(673.5875) WISE Amsterdam** - In a press release the European Bank for Reconstruction and Development says the contribution must be seen as "a further step in the efforts by the international community to make the Chernobyl site safe" and as "a catalyst that will give additional momentum to the Chernobyl funding from donor countries". In September 2007, two key contracts were signed to progress this work, using funds that are managed by the EBRD. One contract is for the construction of the New Safe Confinement, a structure that will be built over Chernobyl's reactor 4. The second contract is for the completion of the Interim Storage Facility 2, a project to deal with spent fuel from reactors 1-3.

Preparatory work for the "New Safe Confinement" is progressing and a contract for site clearance and excavation works has recently been

awarded. These preparations are a prerequisite for the eventual construction of the foundations for the confinement. Contractors are currently working on the design and the technical details of both the "New Safe Confinement" and the storage facility. Final designs are scheduled to be submitted to the Ukrainian regulator in spring 2009.

The "New Safe Confinement" will eventually cover the present shelter which was built after the 1986 accident and which is deteriorating. Substantial stabilization measures - funded by the Chernobyl Shelter Fund - however have reduced the risk of collapse.

The "New Safe Confinement" will be assembled on the site and eventually be slid over the reactor on rails. It will be the largest such project in the history of engineering with 257 meters across, 105 meters high, and 150 meters in length. The structure will

have a planned lifespan of 100 years and will be equipped with cranes for possible later deconstruction.

The structure of the "New Safe Confinement" is funded through the Chernobyl Shelter Fund, while the Interim Storage Facility 2 is financed by the Nuclear Safety Account. Both funds are administered and managed by the EBRD, which currently manages a total of 6 nuclear safety and decommissioning funds.

Funding for the arch was a long time in coming. Ukraine first asked the West to help make Chernobyl safe in 1992 after Soviet rule collapsed. Debate proceeded through the 1990s, with Ukraine accusing the West periodically of indifference and some Western countries balking at Kiev's repeated calls for more money. The contract to build the confinement was awarded to the French-led Novarka consortium,



which includes Bouygues and Vinci, as well as German and Ukrainian firms. The structure was originally intended to be completed in 2005, but has since been postponed: currently it is expected to be complete in 2012. The work will cost around 1.05 billion euros in total, the EBRD says, and 975 million euros have been raised including this donation.

The EBRD was established in 1991 in

order to help central and eastern European countries build market economies and democracies following the collapse of the Soviet Union. It is owned by 61 countries and two intergovernmental institutions. Despite its public sector shareholders, it invests mainly in private enterprises, usually together with commercial partners. The EBRD provides project financing for banks, industries and businesses, both new ventures and investments in

existing companies. It also works with publicly owned companies to support privatization, restructuring state-owned firms and improvement of municipal services.

**Sources:** Reuters, 26 May 2008 / Press release EBRD, 19 May 2008 / World Nuclear News, 22 May 2008 / BBC News, 13 September 2007

**Contact:** WISE Ukraine

## IN BRIEF

**DOE submits application for Yucca Mountain.** The U.S. Department of Energy submitted an 8,600-page application June 3, to store nuclear waste underground at Yucca Mountain in Nevada. The plan involves burying spent nuclear fuel and radioactive waste in tunnels underneath a ridge in the Mojave Desert, 140 km northwest of Las Vegas. The application to the Nuclear Regulatory Commission is another step in a process that has already consumed more than 20 years and US\$6 billion (Euro 3.9 bn). This year Congress provided US\$386.5 million for the program, US\$108 million less than the Bush administration had wanted as it geared up for submitting its application for a construction license. In 2007 the project received US\$444 million. The application is a key requirement of the Nuclear Waste Policy Act of 1982, which set in motion studies leading to selection of Yucca Mountain as the nation's lone option for a national nuclear waste dump. Under the law the government is contractually required to accept spent fuel from commercial power plants and was to have had a central repository available for fuel shipments by 1998

Opponents state they will challenge the application and claim it is incomplete. Senate Majority Leader Harry Reid said "The application, which includes designs that are only 35 percent complete, lacks critical information that cannot simply be overlooked. For example, just how would the Energy Department respond in the event of an emergency? We can't answer that question because the department doesn't even know."

**UPI, Press release NEI & Las Vegas Sun, 3 June 2008**

**Moody's: nuclear too expensive.** According to a report (quoted by Platts), released June 2 by Moody's Investors Service, a utilities credit quality could be negatively impacted by building a nuclear power plant. A electric utility might find a 25% to 30% deterioration in its financial credit metrics. According to the report nuclear technology is costly, potentially exceeding US\$7,000 (4,500 euro) per installed kilowatt, which could make it twice as much as a scrubbed coal-fired plant or three times as expensive as a combined-cycle natural gas-fired plant. The report also said utilities should not rely solely on federal loan guarantees in deciding whether to build because it says that program's "form and substance" remains unclear and will be "subject to a material amount of political influence" into the future.

**Platts, 2 June 2008**

**European Parliament adopts resolution for an end to DU weapons.** In a resolution adopted on depleted uranium (DU) weapons, the European Parliament calls for a moratorium on their use, increased pressure for an international treaty to ban them, and more research on these weapons. The resolution "strongly reiterates its call on all EU Member States and NATO countries to impose a moratorium on the use of depleted uranium weapons and to redouble efforts towards a global ban." The resolution was adopted with 491 votes in favor, 18 against and 12 abstentions.

Depleted uranium is used in ammunition, to increase the strength of casings for penetrating armor. Upon impact, however, the depleted uranium can be dispersed in the form of DU dust, which can cover large areas of conflict zones, and have adverse health effects both for soldiers and civilians, even long after the conflict is over.

The joint resolution adopted by Parliament calls on the Member States and the Council to take the lead in working towards an international treaty -- through the UN or through a 'coalition of the willing' -- to establish a ban on the development, production, stockpiling, transfer, testing and use of uranium weapons as well as the destruction or recycling of existing stocks, should there be conclusive scientific evidence of harm caused by such weapons."

**European Parliament, 22 May 2008**

**Swiss authorities destroy evidence nuclear smuggling case.** Switzerland destroyed evidence in a case linking the Tinner family to Libya's now-abandoned nuclear program. The documents formed part of a case against three members of the Tinner family who are suspected of involvement in the nuclear smuggling ring of Abdul Qadeer Khan, a key figure in Pakistan's atomic weapons program. Khan has admitted selling nuclear arms technology to Iran, Libya and North Korea. But President Pascal Couchepin stressed on May 24, the documents were destroyed to prevent them from falling "into the hands of a terrorist organization" or a rogue state. According to Couchepin federal prosecutors discovered that the information contained in the

files ("detailed construction plans for nuclear weapons, for gas ultracentrifuges to enrich weapons-grade uranium as well as for guided missile delivery systems") could be "explosive" for Switzerland's national security. The government ordered already in November that the files had to be destroyed, but did not make that decision public at the time. According to Couchepin, the documents were destroyed under the observation of the IAEA. The destruction of the documents - and the secrecy surrounding the decision - has caused an uproar in Switzerland. Senior legal experts have questioned why documents relating to a pending court case were destroyed. The parliamentary committee charged with overseeing intelligence issues said it will collect further evidence on how the files were destroyed and publish a report before the fall.

The documents were among those seized from the Tinnens in the course of a government investigation that started in October 2004. A trial date for the brothers Urs and Marco and father Friedrich has not been set. The potential impact of the destruction of evidence in case the defendants are ever brought to trial, is unclear. Urs and Marco are being held in investigative custody. Their father, who has admitted knowing Khan since the 1970s, was released earlier this year. All three are being investigated on suspicion of violating export laws on controlled goods and war materials.

**Associated Press, 24 May 2008**

**First Russian fuel for Kudankulam.** On May 26, the first batch of nuclear fuel for the Kudankulam reactor was delivered from Russia to India. The construction of the two 1,000-megawatt light-water reactors in southern Tamilnadu state started in 2002. Loading of the fuel is expected in the second half of next year. Under the contract, Russia is to deliver the fuel and is to remove spent nuclear fuel for reprocessing. The two countries have signed bilateral agreement on the delivery of another four 1,000-MW reactors for the Kudankulam plant. Besides, Russia offered India to take part in the construction of the East Siberian nuclear enrichment center near Angarsk, which is suppose to become the international enrichment center.

**Itar-Tass, 26 May 2008**

**Multi-billion dollar contract to clean-up Hanford.** How beautiful life is for the (nuclear) industry: first ruin the environment and then sign a multi-billion contract to clean it up..... Washington Group, Energy Solutions and Areva will undertake a \$7.1 billion (4.6 billion euro) contract to manage radioactive waste from the USA's nuclear weapons program. The work involves operating tanks of liquid radioactive and chemical waste at the US Department of Energy's (DoE's) Hanford site in Washington state. The site has been in use since 1943: First as part of the Manhattan Project that created the world's first nuclear weapons, then as a nine-reactor plutonium production complex throughout the Cold War period. There was also some research into peaceful uses of nuclear energy.

One result of this program of work has been almost 241 million liters of liquid radioactive and chemical waste. This is stored in 177 large underground tanks in 18 groupings, or 'farms' which the DoE describes as "ageing".

The DoE said the contract covers a five-year base period and includes options to extend for a further five years. Washington Group and Energy Solutions formed a new company, Washington River Protection Solutions (WRPS) bid for the work. It will employ Areva Federal Services as a major subcontractor. Areva said the contract was of "significant importance" to it and that it would provide experienced personnel and liquid waste vitrification know-how.

**World Nuclear News, 2 June 2008**

**Vietnam: bill approves nuclear power.**

On June 3, lawmakers in Vietnam approved by an "overwhelming majority" the use of nuclear energy for "civilian purposes only." The Bill should pave the way for the construction of Vietnam's first nuclear power plant, and confirmed a decision already taken at the top levels of the country's Communist Party. Vietnam relies heavily on hydro-electric plants and is struggling to meet the growing energy requirements of consumers and an economy that expanded by 8.5 percent last year and power needs rising 15 per cent a year.

Vietnam's first nuclear plant (if built) would be built in southern Ninh Thuan province, and is planned to be operational by 2020. State-run Electricity of Vietnam (EVN) has said it expects nuclear power capacity to grow rapidly, reaching up to 11,000 MW by 2025. Well, we've heard that before!

**Channelnewasia.com, 4 June 2008**

**St. Petersburg: Rumors of accident cause panic.** Rumors of a possible radioactive emission from the Leningrad Nuclear Power Plants (Sosnovy Bor), 50 kilometers from St. Petersburg, caused some panic and a run on local drug stores for iodine. Later, it turned out that hackers attacked ("in a coordinated effort," according to Russian news agency RIA Novosti), Russian web sites providing access to the Automatic Radiation Environment Control System (ASKRO), including the Leningrad NPP site, the rosatom.ru site, and others. At the same time several Internet forums had false reports of radioactive emissions from the Leningrad Nuclear Power Plant.

In 2007, several dozen people believing similar false reports of an accident at the Volgodonsk nuclear plant fell ill after poisoning themselves with iodine believing that ingesting it would offset radiation damage.

The Leningrad Nuclear Power Plant runs on three Chernobyl-style RBMK-1000 reactors, said to be fatally flawed by many independent experts. The projected engineered life span of two of the plants reactors ran out in 2003 and 2005. But their period of usage was extended - without conducting state required environmental impact studies.

**Bellona Foundation, 21 May / RIA Novosti, 23 May 2008**

## The NUCLEAR MONITOR

The Nuclear Information & Resource Service was founded in 1978 and is based in Takoma Park, Maryland. The World Information Service on Energy was set up the same year and is housed 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.

The 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](http://www.antenna.nl/wise/esp)). A Russian version is published by WISE Russia, a Ukrainian version is published by WISE Ukraine (available at [www.nirs.org](http://www.nirs.org)). Back issues are available through the WISE Amsterdam homepage: [www.antenna.nl/wise](http://www.antenna.nl/wise) and at [www.nirs.org](http://www.nirs.org).

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