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CE PULLS OUT OF CALVERT CLIFFS-3 LEAVING EDF & EPR IN THE LURCH

In many ways, Calvert Cliffs-3 was the flagship of the U.S. nuclear renaissance. In the summer of 2007, it became the first reactor to submit even a partial application for a construction/operating license from the NRC in more than 30 years. The company created to build and operate the reactor -UniStar Nuclear- was a combination of giants in the nuclear industry: Constellation Energy (CE) and Electricite de France (EdF), using the most modern reactor design available, the EPR from Areva.

(718.6094) NIRS - Calvert Cliffs-3 would be built on a site already hosting two reactors and the idea received enthusiastic support from local officials, as well as nearly every statewide public official in Maryland -Democrats and Republicans alike. It would be located in a region with a booming economy that was projecting serious future shortfalls in electricity demand. It had come up with an innovative financing scheme to eliminate financial risk: 100% financing from U.S. and French taxpayers coupled with a protective layer of seven Limited Liability Corporations between the reactor itself and the parent companies.

What could go wrong?

As it turned out, just about everything.

When Constellation announced late on Friday, October 8 -through a deliberate leak to the Washington Post- that it was pulling out of the Calvert Cliffs-3 project despite having just been offered only the second taxpayer loan for a new nuclear reactor, the reason given was the conditions attached to that loan. Constellation complained that the upfront cost of the loan -US$880 million for a US$7.5 billion (5,4 billion euro) loan, or less than 12%, was too high. And a second proposal from DOE -to cut the upfront fee to US$300 million if UniStar would simply promise to actually complete the reactor and guarantee it would sell 75% of its electricity, was "onerous."

Really? The profit margin on a US$10+ billion reactor (UniStar earlier had received a promise of US$2.9 billion from COFACE, the French Export-Import Bank) designed to operate at least 60 years is so narrow that US$300 million would kill the deal? Not likely.

In fact, NIRS had predicted the demise of Calvert Cliffs-3 two months earlier for a bevy of reasons -none related to "onerous" loan conditions- in a lengthy post on DailyKos August 5, 2010. If you want a full explanation of the reasons, you can read the post here: http://www.dailykos.com/storyonly/2010/8/5/889695/-The-nuclear-renaissance-stalls-with-pending-collapse-of-Calvert-Cliffs.

Briefly, the Calvert Cliffs-3 project collapsed because of a combination of factors, including soaring construction cost estimates; a large drop in electrical demand due to the ongoing recession and the institution of new energy efficiency programs; plummeting natural

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gas prices; continued revelations of EPR design deficiencies coupled with alarm over the horrific experience of EPR construction in Finland and France; determined opposition from opponents like NIRS; and unforeseen competition from renewable energy sources, especially offshore wind.

Indeed, it may only be coincidence, but almost immediately after Constellation's announcement, a consortium led by Google announced it would spend US$5 billion to build transmission lines to bring thousands of megawatts of offshore wind power from the mid-Atlantic coast to the mainland. Earlier in the year, a small offshore wind company, Bluewater Wind, which already has received permission to build hundreds of megawatts off the Delaware coast and is seeking approval for larger projects off the coasts of Maryland and New Jersey, was bought by energy giant NRG Energy -bringing a deep-pockets competitor to Constellation's service area.

Constellation could see the writing on the wall, and began to shift gears. With an option, contained in the contract when EDF purchased 49.9% of Constellation's five existing reactors to bail out the company from bankruptcy (and Warren Buffett, who almost certainly would have ended the UniStar project) in 2008, to force EDF to buy a handful of ancient coal and gas plants scattered around the U.S. for US$2 billion, Constellation saw another possible future.

Those old plants are worth only about US$500 million combined. Forcing EDF to buy them for US$2 billion would leave US$1 billion plus in profit. Constellation put in a bid to buy a fleet of much more modern gas plants in New England. This would allow it to become a regional electricity powerhouse (three of Constellation's existing reactors are in the region), and it wouldn't even have to go into debt to do so. At this writing, Constellation has not yet exercised this "put" option, and is apparently still negotiating with EDF on the issue, but Constellation's intent is clear.

EDF reacted to Constellation's announcement it was leaving the project with what appeared to be genuine surprise -although anyone following the investment community's advice, which was generally consistent in opposing Constellation's continued involvement in Calvert Cliffs-3, shouldn't have been shocked. Constellation's stock went up the first week of trading after its announcement.

In any case, EDF is scrambling to resurrect the project. In an October 13 letter to Constellation, it offered "to shoulder 100% of the risk and burden until construction begins." Alternatively, the letter said, "EDF is prepared immediately to purchase all of Constellation's 50% interest in UniStar at fair market value…" But, EDF said Constellation would have to agree not to exercise its US$2 billion "put" option.

Shares and nuclear power.

After the news that Constellation Energy Group Inc had cancelled plans to build at third nuclear reactor at Calvert Cliffs in, the companys share price rose by 15 cents to ÚS$32.50. Meanwhile on the other side of the Atlantic, EdF - the largest shareholder in the Constellation Group - saw its share price fall by 3.4 per cent on the news (the share price is down 27 per cent this year).

Greenpeace Nuclear Reaction, 14 October 2010

Constellation responded immediately, saying it would be happy to sell its share of UniStar -including the land for the reactor- for US$1, plus repayment of US$117 million it has invested in the project. But it said the "put" option was a separate issue.

That should give some idea of the value Constellation believes a new nuclear reactor in a deregulated market like Maryland's holds -essentially zero.

For EDF to rescue the project, it would have to find another utility to take at least 50% of it -the U.S. Atomic Energy Act prohibits "foreign ownership, control or domination" of a U.S. reactor, and thus EDF could not even get a license to build a reactor. NIRS is already in litigation on this issue in the NRC's license hearing process; we have charged that the Constellation/EDF UniStar structure is illegal under the Atomic Energy Act, even without additional involvement from EDF. For the moment, at least, that hearing process continues.

And what utility would be crazy enough to take on a US$10 billion+ project in a deregulated electricity market when the largest utility already in that market has been intimately involved with the project for years, and has determined that it is simply far too economically risky to undertake?

Meanwhile, the effects of the Calvert Cliffs case extend far beyond Maryland. Originally, EDF and Constellation had teamed up to build four EPRs in the U.S., with an eye toward additional expansion after that. The collapse of Calvert Cliffs certainly ends the UniStar project to build at Nine Mile Point in New York. An EPR proposed for Missouri, with UniStar involvement, was cancelled last year. And an EPR proposed for Pennsylvania, which even the plant's owner PPL admits on its website would cost US$13-15 billion for a single reactor -the highest cost acknowledged to date by a U.S. Utility- appears to be on life support.

EDF's -and the French government's- dreams of becoming a major player in the U.S. nuclear energy future appear dashed. For its part, Areva now has no orders for reactors in the U.S. and has at least temporarily abandoned plans to build a reactor component plant in Virginia to serve what it once thought would be a growing U.S. market.

But it's not only EDF, Areva and the French government that are being left behind by the new electricity realities in the U.S. The reactor project that actually got in the first entire application to the NRC -NRG's South Texas Project- is also in trouble, for many of the same reasons. It too wants a loan from the Department of Energy, and presumably at less cost than offered to Calvert Cliffs. But it too operates in a deregulated market, faces increased cost estimates (one partner, the City of San Antonio, already essentially dropped out of the project due to soaring projected costs), issues of

foreign ownership and control, and enormous competition from natural gas and wind power (Texas is already the U.S. leader in wind power). On October 19, NRG CEO David Crane told Associated Press that if natural gas prices are expected to stay low, NRG won't build South Texas even if they receive a taxpayer loan. And gas prices are expected to stay very low for the foreseeable future.

Update: On Oct. 26, EDF agreed to buy all of UniStar for about $250 million. EDF still hopes to get a DOE loan, although it would need a U.S. partner to get a license. **Source and contact:** Michael Mariotte at NIRS Washington

GREENPEACE TELLS BNP-PARIBAS 'STOP DANGEROUS RADIOACTIVE INVESTMENTS'

On October 21, Greenpeace activists in a number of European countries (Russia, Luxemburg, Turkey and France) called on the international bank BNP Paribas to "stop radioactive investments", including its plans to fund an obsolete, dangerous nuclear reactor in Brazil.

(718.6095) Greenpeace International - In Paris, Greenpeace activists used a BNP decorated armoured truck to deliver millions of fake 'radioactive BNP-Paribas notes' to AREVA's, headquarters, the company that is building Angra 3, exposing the nuclear link between the two. The banking group, which provides more finance to nuclear industry than any other bank in the world: BNP invested €13.5 billion (US$ 18.7 billion) in nuclear energy projects from 2000-2009. Profundo, independent investments consultancy research. Summary of the findings, as well as full report, available at www.nuclearbanks.org. BNP is planning to provide crucial financing for the construction of the nuclear reactor Angra 3, just 150 kilomet-rers from Rio de Janeiro, as part of a French banking consortium. The total amount that is reported to be negotiated is €1.1billion.

"Angra 3 must be cancelled. It uses technology that pre-dates the Chernobyl nuclear disaster, and that would not be permitted for use in the countries that are financing it. There has been no proper safety analysis and the legality of the project is in doubt. It will not benefit the people of Brazil," said Jan Beránek Greenpeace International nuclear campaigner.

"BNP's customers have the right to know that their bank is misusing their money. Brazil does not need more nuclear electricity, it has abundant wind, hydro and biomass resources for energy – all of which provide cheaper options without creating environmental and health hazards," he continued.

The construction of Angra 3 started in 1984 and stopped in 1986 following the Chernobyl nuclear disaster, when banks withdrew their funding. Most of the equipment that will be used to build the reactor pre-dates Chernobyl and has been left on the site for the last 25 years. It is now dangerously obsolete.

Angra 3 falls far behind current generation of reactor technologies, which themselves suffer safety problems, construction delays and skyrocketing costs. Any large-scale upgrades and adaptations required to integrate new safety requirements will lead not only to higher construction costs, but also increase the risk of unplanned outages during its operation. There are additional safety concerns, such as, in its planning, there was no risk-analysis carried out, in clear violation of international standards: International Atomic Energy Agency Safety Requirements stipulate that the probabilistic safety assessment is performed and evaluated prior to construction. This has not been done for Angra 3 as is pointed out in both the official license from Brazil's nuclear regulator CNEN (Comissão Nacional de Energia Nuclear)as well as from ISTEC German report. Angra 3 is accessible only via one road, which frequently is blocked due landslides. As is the reality for all nuclear reactors, there is still no permanent or safe solution for storing hazardous nuclear waste, which remains lethal for millennia.

"The financial players have been telling us for too long they are not responsible for the direction of energy, it is a political problem. In reality, it is they as well as manufacturers who allow these dangerous nuclear projects to see the light of day,"said Sophia Majnoni d'Intignano, Greenpeace France nuclear campaigner.

"It is high time that the banks fulfil their responsibilities. Greenpeace calls on BNP Paribas to announce its immediate withdrawal from Angra 3 and allow full transparency on its radioactive investments."

Greenpeace launched this campaign on 16 October, when volunteers began putting posters up around BNP branches and stickers on its ATM machines asking the public: "Do you know what your bank does with your money? "

For more information check: http://www.greenpeace.org/international/en/publications/reports/BNP-Paribas-and-dangers-of-financing-nuclear-power/

Source: Greenpeace Press release, 21 October 2010
Contact: Jan Beránek, Greenpeace International Nuclear Campaigner
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NUKESPEAK: SUBSIDIES NOT ALLOWED? LET'S CALL IT 'TAKE ON FINANCIAL RISKS' THEN

On October 18, the U.K. listed eight potential sites in England and Wales for new nuclear power stations that should be operational by 2025, the first in 2018. And Energy and Climate Change Secretary Chris Huhne was repeating his mantra: "There will be no public subsidy for new nuclear power."

(718.6096) WISE Amsterdam - But 'no public subsidy for nuclear power' is problematic if you actually do want to support new-build, not only political but also financial. So he decided to no longer call it subsidies. Now the text-to-be-explained is as follows, “the U.K. is not ruling out action to take on financial risks or liabilities of nuclear operators for which they (the government) are appropriately compensated or for which there are corresponding benefits” Huhn said. The Lib.Dem. minister campaigned against new nuclear power stations during the election.

The new-nuke-speak provoked several questions by MP’s in the British Parliament. The questions are interesting but the answers are even much more interesting.
1. “What estimate the Minister has made of the maximum compensation payable to the Government for taking on financial risks or liabilities; and what mechanism he proposes to use to
(a) define and
(b) measure benefits arising from taking on such risks or liabilities ?

Minister of State Charles Hendry, second in line after Huhn: "As the 18 October 2010 statement on 'no subsidy for new nuclear power' made clear, we are not ruling out action by the Government to take on financial risks or liabilities for which they are appropriately compensated or for which there are corresponding benefits. The Government would consider any potential measures in this area on a case-by-case basis, in line with the policy as set out in the statement."

2. “How much support
(a) the Department and its predecessor and
(b) non-departmental public bodies for which the Department is responsible have provided to the nuclear industry in the form of
(i) full-time equivalent staff,
(ii) facilities, and
(iii) research and development expenditures
in each of the last 10 financial years; and if the Department will indicate in each such case which costs
(A) arise from the UK’s nuclear legacy and
(B) are associated with possible new nuclear power stations.

Charles Hendry: "The Department of Energy and Climate Change does not hold the information requested centrally and providing a breakdown of the support referred to would result in a disproportionate cost."

3. “What information the Department holds for benchmarking purposes on the level of private insurance cover available to operators of nuclear installations in other countries”?

Charles Hendry: "We do not hold any specific information on the level of private insurance cover available to nuclear operators in other countries."

Time for action.
Several groups and individuals in the UK have come together to initiate a more coordinated campaign against new-build. One of the results of these gatherings is the “No Money for Nuclear” (NM4N) campaign-group which believes that the level of support received by the nuclear industry in the UK is unjustified and a serious drain on public finance, especially at a time when the weak and vulnerable are suffering from significant cuts in public expenditure. In addition, the way waste disposal and decommissioning costs of new nuclear power stations are gathered poses a serious risk to the public purse in the future.

The government claims that nuclear power and renewable energy can exist together in a competitive market place. However, the nature of nuclear power is that much of the costs, those for waste disposal and decommissioning, do not materialise until the end of the working life, even though these costs become inevitable once the power station starts operating. The flat rate nuclear levy will act as a substantial subsidy to these capital costs. NM4N believe that it is possible to move to a much more sustainable energy economy without the need for nuclear power.

NM4N spokesperson, Pete Rowberry said “The coalition government has promised that nuclear power stations would not be built if they needed public subsidy. However, they have not changed any of the significant public support which the industry already receives. It also seems that they are determined that support for the nuclear industry will be extended further by allowing it to benefits of the carbon pricing and emissions trading regimes, in spite of the fact that nuclear power is significantly higher producer of CO2 than any renewable source. It continues to cover the industry’s liability in the case of a nuclear accident, in spite of the statement by Rt Hon Chris Huhne MP, Secretary of State at the Department of Energy and Climate Change that this subsidy would be ended, yet another example of the coalition’s broken promises."

Sources: Bloomberg, 18 October 2010 / Press release NM4N, 25 October 2010 / email D. Lowry, 27 October 2010
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R.E.C.A. AND COMPENSATING NAVAJO NATION U-MINERS

In a new book, *"Yellow Dirt. An American Story of a Poisoned Land and a People Betrayed"*, award-winning environmental journalist Judy Pasternak follows four generations of Navajo families in a uranium mining area. She chronicles the cultural stoicism that prohibited them from complaining for so long about the alarming rates of cancer deaths, the betrayal of trust by corporate and government interests, the growing awareness of the tragedy visited on them in the name of national security, and the efforts to fight for restoration.

(718.6097) WISE Amsterdam – The crime story in "Yellow Dirt" develops around early tensions within the Atomic Energy Comittee. Pasternak quotes AEC safety inspector Ralph Batie telling a Denver Post reporter in 1949: "Definite radiation hazards exist in all the plants now operating." Batie was ordered to "keep your mouth shut." Jesse Johnson, the liaison between Washington and the mining companies, cut Batie's travel budget and strong-armed him into transferring out of the area. Pasternak writes that "Johnson simply would not allow uranium to pose a distinct peril of its own; he would not let cancer be an issue."

Sixty years later, while U.S. Congress considers amendments to the Radiation Exposure Compensation Act (RECA) which would specifically allow compensation to workers exposed after 1971, make qualification for benefits easier to obtain, incorporate additional exposure testing and apply to those exposed to fallout from nuclear testing in more geographical areas, additional RECA coverage efforts are in the works.

One movement seeks to expand RECA to cover members of the Navajo Nation who were workers or children of workers in the uranium industry. Navajo workers and their descendants have experienced unique and devastating effects since uranium mining began on or near reservation lands.

Uranium Mines on Reservation Lands
As the largest Native American tribe in the U.S., the Navajo Nation covers about 27,000 square miles of parts of New Mexico, Utah and Arizona.

Because some of the uranium mines operating during the 1950s and 1960s were located on Navajo reservation lands in these states, many of the uranium mine workers were members of the Navajo Nation and were repeatedly exposed to dangerous levels of radiation. This caused the uranium miners, their families and later generations throughout the Navajo Nation to experience radiation-related illnesses like cancer, kidney disease and birth defects.
In addition, there has been a significant environmental impact on Navajo lands. According to Navajo President Joe Shirley, some uranium mines and milling sites were never properly closed or cleaned up. Residents near exposed areas have experienced sickness from radiation and pollution to the land and water surrounding their homes. This resulted in a tribal decision in 2005 to ban all uranium mining and milling on Navajo lands, but as the cost of uranium rises, companies have been knocking on the Navajo Nation's door.

Navajo Attitudes Toward the Resource.

In the Navajo creation story, there is mention of uranium. Uranium - called "cledge" - is from the underworld, and is to be left in the ground. According to the creation story, the Navajo were given a choice between yellow corn pollen and uranium. In Navajo belief, the yellow corn pollen possesses the positive elements of life. The pollen is prayed for and carried in medicine bags. Uranium was thought of as an element of the underworld that should remain in the earth. When uranium was released from the ground, Navajos believed it would become a serpent. Evil, death and destruction were seen as the problems the Navajo would face. These problems have become reality to the Navajo since mining began

Efforts to Expand RECA
The Navajo Nation Dependents of Uranium Workers Committee has led a grassroots effort in recent years to aid the children of Navajo uranium miners who suffer ongoing effects related to radiation exposure. This group claims that many Navajo people who would otherwise be eligible for RECA coverage cannot get the help they deserve because the medical records from 50 or more years ago they need as proof no longer exist.

In past meetings with the Navajo nation about the continued effects of uranium mining, U.S. Senator Tom Udall has stated that "he is committed to continuing a dialogue on the effects of uranium mining on Navajo people and to seek justice for those who have been harmed." His recently proposed amendments to RECA could benefit many members of the Navajo nation.
In addition to adding areas of coverage and including post-1971 workers, the RECA amendments could help the Navajo by allocating funds for further research on the impact of radiation exposure to workers, their families and communities. They could also allow RECA claimants to use affidavits in place of non-existent records and grant more compensation and medical benefits to eligible victims.

Respect and Support
Navajo President Joe Shirley continues to fight for RECA amendments, a moratorium on uranium mining in the U.S. and help with addressing the reservation environmental issues. The

first step in compensating the Navajo people exposed to radiation and uranium activity who need help today would be for Congress to pass the proposed amendments, which are currently awaiting a hearing before the Senate or House Judiciary Committee.

Source: http://knowledgebase.findlaw.com/kb/2010/Oct/145201.html
"Yellow Dirt. An American Story of a Poisoned Land and a People Betrayed", written by Judy Pasternak, Sept. 2010, Free Press. 317 pp. ISBN 978-1-4165-9482-6

For more information look at the Navajo Justice Page at: http://www.umich.edu/~snre492/sdancy.html

HERMANN SCHEER

Hermann Scheer, Member of the German Parliament, President of the European Association for Renewable Energy EUROSOLAR, Chairman of the World Council for Renewable Energy WCRE, honored with, amongst other prices, the Right Livelihood Award, died on 14 October 2010 at the age of 66 in Berlin.

(718.6098) WISE Amsterdam - In 1999, Hermann Scheer won the Right Livelihood Award for his tireless work for the promotion of solar energy worldwide. When he received the award, he described solar energy as "the energy of the people." And that is the difference between Scheer and many other renewable energy advocates: he knew energy has a political dimension and is therefore a tool to 'empower people' (see the quote on Desertec below). He also was very clear that the transition to renewable energy will not only bring about 'winners' but also 'losers', and that those were the ones where opposition would come from.

What follows are a few excerps from a rush transcript of an interview Scheer gave, only a few weeks before his death, to Democracy Now!

"The tragedy of our present civilization is that it became dependent on marginal energy sources. The marginal energy sources are fossil sources, fossil resources and nuclear, based on the raw material uranium. The gigantic energy potential is the renewable energy potential always all coming from the sun, including its derivates, like wind and the photosynthetic-produced—photosynthetically produced materials, organic materials, plants, hydro-base. And the sun offers to our globe, in eight minutes, as much energy as the annual consumption of fossil and atomic energy is. That means to doubt—the doubtings if there would be enough renewable energy for the replacement of nuclear and fossil energies, this argument is ridiculous. There is by far enough. (…)

Many people, including governments, including many scientists, who get their orders for studies from them, they believe and think that the present energy suppliers, the present energy trusts, the companies, they should organize the transformation. And this is a big mistake—a big mistake—because this part of the society is the only one who has an interest to postpone it. The only one. All others, all the others, have an interest to speed it up. But as long government think that it should be left to the energy companies, we will lose the race against time. (…)

It is a fight. This is a structural fight. It is a fight between centralization and decentralization, between energy dictatorship and energy participation in the energy democracy. And because nothing works without energy, it's a fight between democratic value and technocratical values. And therefore, the mobilization of the society is the most important thing. And as soon as the society, most people, have recognized that the alternative are renewable energies and we must not wait for others, we can do it by our own, in our own sphere, together in cooperatives or in the cities or individually. As soon as they recognize this, they will become supporters.

From a press release by Hermann Scheer, 13 July 2009: "The Desertec project "Power for Northern Europe from the Sahara desert" is a Fata Morgana. The initiators know: There is no prospect of success. But for all that Desertec could be a good idea indeed. If the aim were to enable the Sahara countries to make the transition to energy generation completely from renewable sources, I would fully agree to the Desertec plan. The EU would make both an essential contribution towards stable economic and social prospects for the southern Mediterranean countries and to fighting climate change. Given their solar and wind power potentials, these countries would even be able to completely move to renewable energy for their electricity supply within less than 20 years. The beneficial effect to their economies would be much stronger compared with exporting power to Europe. (…)

Desertec advocates must also answer another crucial question: Where will happen the value add of renewable energy in future. There is a fundamental difference depending on whether renewable energy is produced in a decentralized manner and, the value add therefore is distributed to the decentralized producers, or whether it is produced by large utilities in a few large power stations concentrating the monopolistic value add."

The whole September 2010 Democracy Now! interview is available at: http://www.democracynow.org/2010/10/15/hermann_scheer_1944_2010_german_lawmaker

CONFIDENTIAL EDF DOCUMENTS SHOW POSSIBLE ACCIDENT RISKS FOR EPR

On September 27, 2010, the French anti-nuclear network Sortir du nucléaire received internal EDF documents, showing that the design and manufacture of the vessel closure head for the EPR in Flamanville could, in theory lead to a Chernobyl-type accident. Several EDF documents show that the number of welds and the type of steel used in some parts of the reactor vessel may cause leaks. EDF considers that the leaks may, in turn, develop into a Chernobyl-type of accident. The type of steel and welds used are part of the emergency shutdown system of the EPR and cover 89 points of entry into the reactor vessel.

(718.6099) Sortir du Nucleaire - The documents demonstrate that EDF engineers have designed parts of the vessel closure head for the EPR that not only endanger safety but also knowingly violate French law (namely violations of the decree of 12 December 2005 on nuclear pressure equipment) relating to nuclear facilities under pressure.

For Sortir du nucléaire, the conclusion is obvious: in spite of all these issues, EDF persists in a policy that sacrifices security for profits. In view of the catastrophic consequences of an accident, this attitude is unimaginable and unforgivable.

Sortir du Nucleaire is working hard to get all the technical documents translated into English, but summaries are already available. Although much has to be investigated before final conclusions can be drawn, we support Sortir du Nucleaire in exactly this call; let the French safety authorities give full disclosure of all documents and let independent specialists research the issue and come to conclusions. If there is no reason for fear it is in the interest of the French authorities and EDF to follow this route, otherwise there is a clear public interest for full disclosure. EDF has confirmed that the documents are genuine but have also already said that they see no problem; they have taken the theoretic problem into account while building the EPR.

Summary of documents highlighting EPR weaknesses
The EDF documents reveal the weaknesses in the design and the manufacture of the control rod drive mechanism (CRDM) casing. This complex mechanism enables the emergency shutdown system of the reactor to be activated. The casing for each mechanism is connected to the closure head of the reactor's pressure vessel and contributes to the leak-tightness of the vessel up to a pressure of 155 bars. If one of the casing is weakened, the whole of the reactor's pressure vessel becomes vulnerable. Sortir du nucleaire comes to three main conclusions

1. Weakness in the welding of the CRDM casing: 4 welds rather than 1
EDF has opted to use 4 welds for the control rod drive mechanism (CRDM) casing of the EPR, whereas only one weld was used for the casing of the CRDM of the 58 French nuclear reactors, in order to minimize the risk of leakage.[i] These four welds constitute a breach of the 12 December 2005 decree on nuclear pressure equipment; the decree states in Appendix 1 (3.3) that "socket welded connections are forbidden."[ii]

However, they are being used for the casings of the CRDM. Yet the EDF is fully aware of the regulations, as it refers to the French regulations having set "a limit on the number of welds."[iii]

A greater number of welds increases the risk of failure of the leak-tightness of the CRDM casing, and this in turn greatly increases the risk of control rod cluster ejection. The consequences of such a failure would be a loss of primary coolant and a real risk of reactor core fusion. According to the EDF's head of nuclear fuels, a control rod cluster ejection can cause a Chernobyl-type accident.[iv]

The risk of rupture of any of the mechanisms' casing in the head of the EPR pressure vessel is multiplied by the number of mechanisms penetrating the vessel head (89), in other words there are 89 weakness sites.

2. Weakness in the stainless steel used in the CRDM casing: a steel which doesn't stand the test of time
The central part of the CRDM casing used for the EPR will be made of martensitic stainless steel which becomes brittle when exposed to heat. This type of stainless steel can fracture without warning, a well-known fact.[v]

In view of its fragility, martensitic stainless steel is not suitable for pressurized equipment in the main primary circuit of a nuclear reactor. And yet this is what EDF plans to do, in full knowledge of the risks: the EDF document points out that "small errors of temperature or functioning time have a big impact on the behavior of these hardened steels".[vi]
This is the second time that there is a breach of regulations for equipment that is crucial to the safety of the EPR. This is a breach of the 12 December 2005 decree on nuclear pressure equipment which stipulates that "the ratio between elastic limit at ambient temperature and resistance to traction at ambient temperature must not exceed 0.85 for martensitic steels".[vii]

The decree states that these are "essential safety requirements for nuclear pressure equipment". EDF engineers are fully aware of this: "Using this type of steel for pressurized equipment in the main primary circuit has always been prohibited in any nuclear reactor. Its use for EPR mechanisms has therefore come under

scrutiny, particularly since this steel does not meet the NPE (Nuclear Pressure Equipment) criteria stipulating that the ratio between elastic limit at ambient temperature and resistance to traction at ambient temperature must not exceed 0.85.[viii]

The use of this type of stainless steel increases the risk of sudden rupture of the CRDM casing and control rod cluster ejection. Such a rupture would cause a loss of primary coolant and a real risk of fusion of the nuclear core. According to the EDF's head of nuclear fuels, a control rod cluster ejection can cause a Chernobyl-type accident.[ix]

As said, the risk of fracture of the stainless steel casing of one of the mechanisms in the head of the EPR pressure vessel is multiplied by the number of mechanisms penetrating the vessel head (89), in other words there are 89 weakness sites.

3. Weakness due to the lack of mechanism preventing control rod cluster ejection

The welding weaknesses of the CRDM and the type of steel used in their casing increase the risk of ejection of the control rod cluster. According to a memo written by EDF's head of nuclear fuels in 2001,[x] ejection of the control rod cluster could cause a Chernobyl-type accident: "The Chernobyl accident in 1986 was due to uncontrolled reactivity, leading to core melt and explosion. Until then, only a few calculations had taken into account this type of accident. The Three Miles Island accident (sic) had already raised this problem. At the time, I took part in an intercompany working group looking at this issue, to carry out a risk analysis of such an accident for our PWRs (Pressurized Water Reactor). Reactivity accidents could occur when the reactor is running at full power. A rupture in the winch or the vessel head could cause one or several of the control rod clusters to be ejected."[xi]

What follows reveals that a Chernobyl-type reactivity accident could happen in any French nuclear reactor: "During such an accident, the fuel close to the ejected control rod will suddenly become very reactive. It is likely to reach very high reactivity values. This power excursion may cause the rupture of the casing, and a fuel pellet explosion, with uranium dispersing into the main circuit water. This could be followed by a steam explosion. If not controlled, a steam explosion produces a huge amount of energy likely to rupture the pressure vessel."[xii]

Finally, according to the same document, a locking device for the rod cluster control ejection would limit the risk of reactivity accident[xiii]. Yet not locking device for rod cluster control ejection has been planned for the EPR[xiv].

EDF's head of nuclear fuels suggests at the end of his memo: "Ideally, we should try not to take into account this type of accident when planning future reactors"[xv].

Notes :

[i] Doc n°2 Synthèse des choix de conception des mécanismes de commande, 5.1. Modification et contrôle des soudures p.11-12, F.Odier, EDF-SEPTEN, (08.12.2008).
[ii] Arrêté du 12 décembre 2005 relatif aux équipements sous pression nucléaires http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000453943&categorieLien=cid
[iii] Doc n°2 Synthèse des choix de conception des mécanismes de commande, 5.1 Modification et contrôle des soudures p.11-12, F.Odier, EDF-SEPTEN, (08.12.2008).
[iv] Doc n°3 Management des activités Physique des Coeurs et Combustibles, p.112 EDF-SEPTEN, A. Berthet (20.12.2001).
[v] "Suite à des constats sur site de fragilisations et de ruptures brutales de tiges de vanne en aciers inoxydables martensitiques", Doc n°4 Note de synthèse sur le vieillissement des aciers martensitiques, III.1, p.9, EDF-Direction Production Ingénierie (08.08.06).
[vi] Doc n°4 Note de synthèse sur le vieillissement des aciers martensitiques, III.3, p.11, EDF-Direction Production Ingénierie (08.08.06).
[vii]Arrêté du 12 décembre 2005 relatif aux équipements sous pression nucléaires, annexe 1, point 4. http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000453943&categorieLien=cid
[viii] Doc n°2 Synthèse des choix de conception des mécanismes de commande, 5.4, p.12-13, EDF-SEPTEN (08.12.2008).
[ix] Doc n°3 Management des activités Physique des Coeurs et Combustibles, p.112 EDF-SEPTEN, André Berthet (20.12.2001). [x] Doc n°3 Management des activités Physique des Coeurs et Combustibles, p.112 EDF-SEPTEN, André Berthet (20.12.2001).
[xi] Id.
[xii] Id.
[xiii] Doc n°3 Management des activités Physique des Coeurs et Combustibles, p.115 EDF-SEPTEN, A. Berthet (20.12.2001).
[xiv] L'EPR sous pression, p.4, document anonyme reçu en septembre 2010.
[xv] Doc n°3 Management des activités Physique des Coeurs et Combustibles, p.115 EDF-SEPTEN, A. Berthet (20.12.2001).

List of EDF documents:

* Document 1: L'EPR sous pression (EPR under pressure), p.4, anonymous document received in September 2010.
* Document 2 : Synthèse des choix de conception des mécanismes de commande, F.Odier, EDF-SEPTEN, (08.12.2008).
* Document 3 : Management des activités Physique des Coeurs et Combustibles, EDF-SEPTEN, A. Berthet (20.12.2001).
* Document 4 : Note de synthèse sur le vieillissement des aciers martensitiques, III.1, p.9, EDF-Direction Production Ingénierie (08.08.06).

Link to EDF documentation and detailed analysis (in French):
http://www.sortirdunucleaire.org/dossiers/EPR-revelations2.html
More information about all problems of EPR:
http://www.sortirdunucleaire.org/dossiers/EPR.html

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IN BRIEF

Argentina reactivates enrichment plant.
Argentina has formally reactivated its gaseous diffusion uranium enrichment plant at Pilcaniyeu over two decades after production there halted. The plant is expected to become operational in September 2011. Plans to recommission the Pilcanyeu plant, which operated from 1983 to 1989, were announced in 2006 and form part of Argentina's ambition to build a self-sufficient nuclear fuel cycle. Work has been underway to refurbish and upgrade the plant, which uses gaseous diffusion, using Argentina's own technology. The first stage of the refurbishment has involved the construction of an advanced prototype of 20 diffusers, and the plant is expected to be able to produce its first enriched uranium for nuclear fuel use by September 2011 according to the CNEA. President Fernandez said that in reactivating the plant, Argentina was recovering lost time. She described uranium enrichment as "a right that we should never have resigned." The project was "a source of great pride" for the country, she said. The original Pilcaniyeu plant had a modest enrichment capacity of 20,000 SWU per year, although plans call for the upgraded plant ultimately to reach a capacity of some 3 million SWU.
World Nuclear News, 26 October 2010

INES 20 years old. Jointly developed by the IAEA and the Nuclear Energy Agency (of the OECD) in 1990, in the aftermath of the Chernobyl accident, the International Nuclear and radiological Event Scale (INES) helps nuclear and radiation safety authorities and the nuclear industry worldwide to rate nuclear and radiological events and to communicate their safety significance to the general public, the media and the technical community. INES was initially used to classify events at nuclear power plants only, but since 2008, INES has been extended to any event associated with the transport, storage and use of radioactive material and radiation sources, from those occurring at nuclear facilities to those associated with industrial use. INES has mainly become a crucial nuclear communications tool. Over the years, national nuclear safety authorities have made growing use of INES, while the public and the media have become "more familiar with the scale and its significance". According to the OECD Nuclear Energy Agency "this is where the true success of INES stands, having helped to foster transparency and to provide a better understanding of nuclear-related events and activities".
Nuclear Engineering International, 22 October 2010

International Uranium Film Festival 2011 in Brazil.
For the first time in history Brazilians will be able to see international independent Nuclear-Energy and Uranium-Documentaries in cinema. The film and video festival Uranio em Movi(e)mento - 1st International Uranium Film Festival 2011 will help to bring the Uranium- and Nuclear question into the national and international public. The deadline for entries is January 20, 2011
The Uranium Film Festival wants to inform especially the Brazilian and Latin American societies and stimulate the production of independent documentaries and movies about the whole nuclear fuel cycle, about the dangers of radioactivity and especially about the environmental and health risks of uranium exploration, mining and processing. The Uranium Film Festival will be held from May 21 to 28, 2011 in the city of Rio de Janeiro and from June 2 to 9 in the city of Sao Paulo.
Until today most of the documentaries about uranium and the nuclear risks are mainly in English, German or French - but not in Portuguese. So the second advantage of our Uranium Film Festival is to subtitle the films to create the so called Yellow Archives. Yellow is the color of Uranium and for that a symbol for the whole nuclear industry.
The Yellow Archives will be the first-ever film library in Brazil and Latin America dedicated to films about the whole nuclear fuel chain organized by the Uranio em Movi(e)mento Festival. Believing that awareness is the first step in making positive changes to better our environment, the Yellow Archives hopes to increase public awareness especially in Brazil and in other Portuguese speaking countries like Portugal or Angola and Mozambique. The DVDs will be used for non-profit, educational and research purposes. Especially schools, universities, environmental groups and other grass root movements will have access to the Yellow Archives.
Contact: info@uraniumfestival.org / Website: www.uraniumfestival.org

India: antinuclear activists arrested. On October 6, eleven activists of "Paramanu Bidyut Birodhi Prachar Andolan" (Campaign against Nuclear Power) were forcefully seized by the local police while distributing leaflets opposing the proposed Haripur nuclear power plant, in the vicinity of Saha Institute of Nuclear Physics in Kolkata, where Dr. Srikumar Banerjee, the Atomic Energy Commission Chairman, had arrived to preach the merits of setting up of a 'nuclear park' at Haripur. The handful of activists present had not even entered the institute campus and were distributing leaflets on the road outside. First one activist was forced into a police jeep and hauled away to the local police station. The rest were pushed away from the immediate vicinity of the Saha Institute. But when the activists continued distributing their leaflets, a police van was brought in, the police suddenly pounced, herded the activists into a police-van and taken to the local station. The activists were held for over 6 hours in the name of interrogation. However, no actual interrogation was conducted. For the real reason for detention, which the officers divulged off-the-record, was to keep the activists away from the site (where the vast benefits of nuclearisation was being preached). That, in their minds, was the ideal way of handling critics and criticism.
Radicalsocialist.in, 7 October 2010

Vermont Yankee tritium leaks into aquifer. The leaking radioactive tritium from Vermont Yankee has now leaked into the aquifer that drinking water is pulled from in and around the town of Vernon, Vermont. Entergy Louisiana, the corporate owners of Vermont Yankee, could do more to contain the contamination but are refusing. The Vermont Department of Health and the Agency of Natural Resources are doing nothing to require Entergy to increase the cleanup effort. More is needed to pressure the state agencies into action. When the Oyster Creek Nuclear Reactor in New Jersey contaminated the ground water with radioactive tritium the NJ Department of Environmental Protection took enforcement action. When the Braidwood Station Nuclear reactor in Illinois contaminated the ground water and then the drinking water aquifer of the local community the Illinois EPA took enforcement action. Entergy Vermont Yankee, likely leaked radioactive materials into our state's ground water for two or three years and now it is clear that at least some of that contamination has also gotten into the local drinking water aquifer. Continued pumping, at deeper depths, should be able to keep hundreds of thousands if not millions of gallons of contaminated water from migrating further into the aquifer and yet there has been no talk from your agencies about requiring even this simple step. Instead Entergy Vermont Yankee is planning on ending all of their pumping in December. Ultimately, the contaminated soil needs to be removed and that can't happen until the plant is retired and cleaned up.

Vermont Yankee is scheduled to close in March of 2012. It is one of the oldest reactors in the country but its owners, Entergy Corporation, want to run it for 20 years past its expiration date. Poor management and old age have lead to a string of accidents and safety concerns.

Entergy has refused to add money to the reactor's clean-up fund, potentially leaving Vermonters with most of a $1 billion dollar clean-up bill in addition to the nuclear waste that is being stored on the banks of the Connecticut River.

On February 23, 2010, and by a margin of 26 to 4 the Senate voted to retire the Vermont Yankee nuclear plant as scheduled. This historic vote marks the first time a state legislature has been able to deny a nuclear plant a 20-year life extension. In March, fifteen towns voted on town meeting to close Vermont Yankee as scheduled. That combined with the 36 towns that voted in 2009, a total of 51 towns, have spoken -- they want Vermont Yankee to close as scheduled.

The public sentiment expressed by the town meeting votes this year and last show overwhelming opposition to continued operation of Vermont Yankee after 2012 and very strong support for requiring Entergy to fully fund the cleanup and for safe, clean and renewable sources of electricity.

The resolution calls for the plant's closure in 2012 and for Entergy-- the owner of Vermont Yankee-- pay for the full cost of decommissioning the plant. A vast majority of Vermonters know Entergy cannot be trusted.

www.vpirg.org

U.S.A.: Hanford cleanup; new deadlines. Washington state and federal officials have agreed on a new schedule for the cleanup of the Hanford nuclear reservation. The good news is that the federal government could no longer ignore cleanup deadlines with impunity. The bad news is that the agreement would push the deadlines forward by more than two decades. Under the new cleanup schedule, 53 millions gallons of radioactive waste stored in 177 underground tanks near the Columbia River would not have to be emptied until 2052. That's a 24-year delay from the existing timetable. (see more on the Hanford tanks, Nuclear Monitor 696, October 23, 2009). Thirty-five of those tanks are double-walled and considered 'reliably safe'. All of the 142 single-walled tanks would have to be emptied by 2047 under this new schedule. And the tanks of most concern — the 67 single-walled tanks known to be leaking — would be emptied by 2014. It's estimated that more than 1 million gallons (1 US gallon is 3.787 liter) of radioactive waste already have leaked. Some of that waste has made it into the groundwater and is slowly moving toward the nearby Columbia River.

The state has long sought to make Hanford cleanup deadlines enforceable in court. Until now, the federal government has steadfastly refused to do so and now the government finally agreed to the court-enforceable deadlines. This accountability has become critical. Without it, there can be little confidence that the government would adhere to any cleanup schedule. The federal government has failed to meet numerous deadlines established in the 1989 Tri-Party Agreement signed by the Energy Department, the Environmental Protection Agency and the state of Washington. It's not as though the state has refused to be flexible. Washington has agreed to more than 400 changes in the Tri-Party Agreement. Yet as recently as last year, the government missed 23 project deadlines.

The Daily News Online (tdn.com), 19 October 2010

Chernobyl 1986-2011

Next year April marks the 25th anniversary of the disaster in the Chernobyl nuclear power station, in the Ukraine. For sure there will be many commemorative activities taking place all over the globe.

WISE will, starting next issue, try to cover relevant developments and news on Chernobyl in the Nuclear Monitor, and we would like to start listing as much as possible activities, publications, actions, official reports, meetings and conferences on this issue.

With several other NGO's in different parts of the world we are preparing a joint call for action. You will hear from us soon, we hope to hear from you aswell; please send in anything you have heard about activities on the coming Chernobyl Day.

In the meantime; join the Virtual March on Washinton, for April 26, as part of an International Radioactive Waste Action Day. Go to
http://www.nirs.org/radwaste/actionday/dayhome.html

WISE/NIRS NUCLEAR MONITOR

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

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

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You can now--with just the click of an icon--send any page on NIRS website to Facebook, Twitter, myspace and many other sites! Plus, you can do that with any of our action pages! Help spread the word: No Nukes, No Coal, No Kidding!

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