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ARGENTINA: NEW EFFORTS TO COMPLETE ATUCHA-2

The Argentinean nuclear lobby is trying to complete the Atucha-2 reactor, after a 20 year interruption, taking advantage of the energy system crisis and partly of the benefits of the devaluation of the Argentinean Peso.

(594.5546) WISE Argentina / WISE Amsterdam - The Atucha-2 project was put out to international tender in 1980. The German company Siemens-KWU won the contract one year later. The original total cost of the project was estimated at US$ 1.9 billion. The 50% of the supplies were to be imported and the rest would be provided by Argentina itself. Siemens, responsible for the imported supplies, guaranteed itself the funding from credits given by consortiums of German banks.

The 692 MW Pressurized Heavy Water Reactor (PHWR) had to begin commercial operation in 1987 with a 40-year lifetime. But it was never finished as work was chronically interrupted during the 1980s. With 81% complete, the project was indefinitely shelved.

At the end of 1990 without beginning operation, a cost update for estimated total construction costs reached the sum of US$ 3.1 billion. Most recent estimates are about US$ 4.0 billion. Keeping the installations inactive, including the heavy water plant in Arroyito, costs more than US$ 25 million per year.

In 1999, a government working group studied the possibilities of completing Atucha-2, but realization was abruptly delayed by Argentina's financial crisis in 2001. At that time, completion work was estimated to cost US$ 800 million, which was mainly to be funded by the national government. In addition, another shocking estimate was made on the definite cancellation of around US$ 375 million, which was intended to convince the authorities of that time of the feasibility of completion.

New lobby

As was reported on 25 September 2003 in *Nucleonics Week*, a lobby made up of CNEA (Atomic Energy National Commission) and NESA (Nucleoeléctrica Argentina S.A., operator of NPPs Atucha-1 and Embalse) would be updating the earlier proposal for completion.

Taking into account the devaluation of the Argentinean Peso (the amount of US dollars needed is declining as the pesos is decreasing in value), the proposed update for the project completion now would be "only" US$ 400 million, according to the present CNEA/NESA plans.

Nevertheless, keeping this analysis would be to fall into CNEA's trap, i.e., accepting that the included costs of this budget are the real ones. As it usually happens in this type of projects, the environment is never considered, and many costs of development, waste management, etc. are not mentioned or they are concealed. Some of them are within the CNEA budget (about 91 million pesos this year) though most costs are directly ignored since experience shows that they are no considered in the electricity price.

The lobby hopes to have a decision by the end of the year and aims to have finished most of the construction work within four years. By that time, presidential elections will be held which could result in another set back for the project, if not sufficiently completed. So, completion of the reactor which has been mothballed since two decades

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could possibly be conducted "in a hurry", which won't contribute to safety, of course.

Economic crisis
An alarm is set in the current national situation, since the nuclear lobby can heavily influence government circles, mainly due to the current energy situation given the devaluation that caused a major "delay" in electricity charges. This imbalance after the 2001 crisis, together with other factors, made the liberalization system and privatizations of energy sectors - implemented from 1992 - reaching crisis.

If the economic recession wouldn't have occurred last years, the electricity supply would be already in crisis, and it is in fact in danger of collapse if the industry revival does not continue to develop. This and a lack of inversions by private utilities would be an argument for CNEA to press the government.

Maybe the main argument in to stop the efforts by the nuclear lobby is the fact that in a country where the 57% of the population are poor and the 27% are destitute, it would be at least immoral to deviate resources to a project that is clearly dangerous and uncertain.

Source and contact: WISE Argentina

PAKS-2: ECONOMICS BEFORE SAFETY

Six months after the serious incident in Paks-2 on 10 April, which could have led to a much more serious accident, the Hungarian public seems to be a bit ignorant. The government and the NPP did a great job in "under-communicating" the seriousness of the event. Even though, it is worthwhile to look back and evaluate the development.

(594.5547) Energy Club – In the incident, several fuel elements got severely damaged when they overheated in a cleaning tank as a consequence of a lack of cooling. A big amount of radioactivity was released into the reactor building and to the outside air environment.

The incident was rated as level 3 on the International Nuclear Event Scale (INES) (see *WISE/NIRS Nuclear Monitor* 586.5507: "Serious incident at Hungarian Paks-2 reactor").

Investigations
In the last six months a truckload of press clippings and another pile of reports, assessment and evaluations were born out of this incident. A report by the Paks NPP itself - 30 days after the incident - is blaming mainly Framatome ANP (the supplier of the cleaning technology) for design deficiencies. This report also points to the Hungarian Atomic Energy Authority (HAEA) that they issued a license for the technology. So the power plant is defending itself like we did when we were kids: "Daddy did let me do that! It wasn't my fault!". (1)

A month after, the HAEA published its own report and concluded that Paks was not enough self-critical (see *WISE/NIRS Nuclear Monitor* 588: "In brief"). Which is true, but they did not press on their own mistakes in the process of licensing. In the meantime the Hungarian NGOs, led by the Energy Club were demanding an independent, international review of the incident with no limitation in time, money and the scope of report.

"Fulfilling" this demand the government decided to invite the International Atomic Energy Agency (IAEA) to review the incident. The mission came in June for ten days with the focus on this particular incident and to produce an "independent and objective analysis of the actions of the HAEA and Paks NPP prior to, during and after the incident".

The IAEA concluded the time pressure, underestimation of safety consequences by both operator and regulators, and overconfidence in vendor Framatome ANP were major factors in the incident (see *WISE/NIRS Nuclear Monitor* 589: "In brief").

Even though the IAEA report concludes many of our critiques, and much stronger then the previous Paks and HAEA reports, the Hungarian Government missed a great opportunity to assess the problems of nuclear safety and to get a precise procedure to follow which would result in a better developed system within the NPP and between the NPP and the regulatory authority.

Lessons
There are several lessons to be learned from this particular incident. First of all, the NPP pushed both Framatome ANP and the HAEA. This resulted a very tight timeline not just for the licensing procedure but even for the design and manufacturing of the whole cleaning system. It is acknowledged by the IAEA that this was one of the main problems throughout the whole process.

This urgency was a result of the economic approach instead of giving more priority to safety over the past decade. Partly because of this speeded process the authority did not rate the original and the

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25 YEARS AGO

NIRS and WISE both celebrate their 25th anniversaries this year. This is the thirteenth article in a series, "25 years ago", comparing anti-nuclear news "then" and "now", to mark our first quarter-century of anti-nuclear campaigning.

Then

In issue 3 of *WISE Bulletin* we wrote about Ireland's first anti-nuclear demonstration against the plan for a nuclear power plant at Carnsore: "Seven thousand people (only 3000 were expected) turned up at Ireland's first anti-nuclear demo at Carnsore Point, on 18-20 August. [...] The ESB (Irish Electricity Board) plans a block of four reactors, total capacity 3000 MW. [...] the ESB started buying up land 4 years ago". (*WISE Bulletin*, December 1978)

Now

Ireland has never become a country using 'nukes' (even no research reactors) and is now even known for its anti-nuclear position in international politics. The Carnsore site was chosen in 1972 by the Irish government. Several groups (citizens, alternative energy, farmers, etc.) started soon to organize against the reactor plans. The 1978 demonstration was an important event in the struggle against the Carnsore reactors. The plans were eventually cancelled in Spring 1980.

There have been some attempts in the 1970s/1980s to mine uranium in the country. In that search the European Community played an important role as it looked for independence from foreign sources. Exploration activities were conducted by several mining companies but no mines opened because of low uranium market prices and local resistance.

Although being in favor of nuclear energy in the 1970s it nowadays appears to have taken over the ideas of the anti-nuclear movement. With the UK west coast close to Ireland, the Irish government has often protested against polluting activities of the UK. It demanded the closure of older and aging Magnox reactors and especially the Sellafield reprocessing plant. (*Country Status Report #3: Ireland*, Laka Foundation, 15 February 1995; www.laka.org/teksten/countryreports-95/3-Ierland.html)

Ireland has also started a number of legal actions against the Sellafield plant at international tribunals and put forward its position against pollution of the Irish Sea in the negotiations on the OSPAR Convention. (see also *WISE/NIRS Nuclear Monitor* 557, 2 November 2001; and 590, 11 July 2003)

An extensive 37-page historical reconstruction of the Irish anti-nuclear movement was published in 1984/1985 by *Dawn Train. The Nuclear Syndrome: Victory for the Irish Anti-nuclear Power Movemen*t can be found at www.innatenonviolence.org/pamphlets/nuclear%20syndrome.pdf.

advanced cleaning technology for fuel assemblies to the adequate safety level. Therefore all the responsibility remained at the level of the NPP.

The communication among the involved departments within the NPP was not appropriate. There were fundamental design deficiencies. The circulation of the coolant was not sufficient, since the inlet and outlet pipes were very close to each other. There was no possibility to detect any anomalies from outside. The only metering system placed in the system, was a Krypton gas (fission product) detection appliance, which alarmed the staff at a very late stage of the problem.

After the cleaning process was finished, the crane which was supposed to open the lid of the cask, was busy with cleaning the reactor. Eventually four hours were enough for loss of coolant and finally by opening the container and entrance of cold water the temperature shock "finished" breaking nearly all of the 30 assemblies, 3 and a half tones of uranium rods into pieces.

We could continue this list for quite a while, but most importantly we need to conclude that the Paks NPP and the HAEA caused a situation in which a far more serious accident could have happened, but fortunately it didn't.

Follow up

The Energy Club filed a case on the basis of the missing crane - which was instructed to be at the top of the tank for the whole period of the cleaning. There two other filed court cases in process.

We can conclude that the story is not finished yet. So far the financial damage is very high. Till the end of this year only the missing electricity production will sum up to a 56 million Euro (US$ 67 million) and it will continue next year probably with a much bigger amount.

Interestingly the Russian fuel manufacturing and trading company, TVEL, will do the rehabilitation work (recovery of the fuel) for 2 million Euro (US$ 2.4 million). And Framatome ANP would only pay for the broken fuel assemblies and the TVEL cleaning contract, which is a very small part of the actual financial damage caused by the technology.

There is a new parliamentary committee established in September, with a mandate for 60 days to investigate the whole issue from the past up to the missing electricity replacement. The work and performance of the committee is pretty much hindered by the governing parties and more importantly by the management of Paks and the deeply involved nuclear authority. So far there was not much discovered than we have known already.

The Energy Club, as the representative of the Hungarian NGOs, is an external expert of the president of the committee. Our main role is to make sure that the public is informed in a way, which ensures nuclear safety. We will see how democracy work if it comes to nuclear questions in Hungary.

References:
(1) The Paks NPP report can be found at: www.atomeromu.hu/hirek-e/angoljelb20301.doc
(2) The HAEA report can be found at: www.haea.gov.hu/english/doc/HAECreport041003_corrected.pdf
(3) The IAEA report can be found at: www.atomeromu.hu/hirek-e/iaea_em2003.pdf

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SALVAGE DEAL AGREED BY BRITISH ENERGY CREDITORS

Various investors and creditors have, after a round of all-night negotiations, finally agreed how they will share out what is left of the failed nuclear generator British Energy (BE). News of the agreement came half a day after a UK government deadline set for midnight on 30 September.

(594.5548) Friends of the Earth Europe - As the creditors were faced with a choice to salvage something of the BE wreckage or get nothing, it was expected that some sort deal would be struck. The settlement, which gives the firm's shareholders just 2.5% of the original equity and other creditors on average roughly a third of their investments, was only made possible with the direct support of the UK government.

British taxpayers will now take on substantial long-term liabilities including spent-fuel ownership, reprocessing subsidies and plant decommission costs which add up to almost £4 billion (US$ 6.8 billion).

The negotiations between creditors were complex, and centred on balancing different claims by different parties. Some of the banks, for example, had lent money to BE just two years earlier just to buy a coal-fired power station, Eggborough in Yorkshire.

Others creditors such as the main bondholders argued that shareholders should not get anything, as normally shareholders always carry the highest financial risks. In the end, a compromise was reached.

BE has also announced, after some delay, that its 50% share of U.S. joint venture Amergen will be sold to its partner Exelon. Disposal of all overseas assets was a necessary condition imposed by the UK government as part of the rescue.

News of the rescue or the sale did not affect BE's share price, which has remained a penny stock at around 5 pence all year, valuing the company at roughly £30 million (US$ 51 million).

For anti-nuclear campaigners, all this could have been an entertaining time to watch nuclear investors in an angry fight for what little is left of their cash.

But it was not so, because tragically so much public money is being wasted to sweeten a deal that otherwise would have certainly failed.

Attention now turns to Brussels, where EU competition commissioner Mario Monti is scrutinising a UK request to give the plan the green light.

Such subsidies are classed 'state aid', and so normally outlawed by EU single market rules that seek to eliminate market distortions. The BE case, which is set to become a major test case, is expected to be decided sometime in 2004.

If the state aid is rejected, then most people expect BE will go into

EURATOM? NEWSLETTER

A new email newsletter, *EURATOM?*, has been launched on 3 October by Friends of the Earth Europe. The new initiative follows the developments which are currently ongoing in the European Union. The purpose of the newsletter is to make Euratom more visible and so speed up the political process of reform. The first issue runs news on a European Parliament resolution (see box on next page), the European Commission in its role as part-time merchant banker for the nuclear industry, European plans for new waste dumping legislation, etc. *EURATOM?* will be published six to eight times a year and next issue will be mailed out in November. To subscribe, send a blank email to: euratom_newsletter-subscribe@topica.com.

administration and go back into the state sector. If this were to happen, then each of BE's stations would likely be sold back to the state for just £1 each.

For earlier *WISE/NIRS Nuclear Monitor* articles on BE see:

-578.5468: "Huge state handout aims to keep British Energy afloat".
-583.5490: "Dismantling British Energy".
-589.5526: "British Energy's rocky path ahead".

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EP: "EURATOM OBSOLETE AND OUTDATED"

In a important breakthrough, the European Parliament has called for a radical overhaul of European Atomic Energy Community (or Euratom), describing the Community's on-going promotion of the nuclear industry as "obsolete and outdated".

MEPs made the move in a resolution on 23 September on the proposed new "EU constitution", which is expected to replace all of the existing EU treaties, except Euratom. Their call goes much further than the European Convention, where attempts to seriously discuss Euratom were suppressed.

The Euratom issue has not yet been taken up by EU leaders, who exclusively hold power to make or break treaties. Governments began final negotiations on the constitution in Rome last weekend, expecting to adopt it by next spring when enlargement and MEP elections take place.

The Austrian government has proposed a separate treaty-revision conference for reforming Euratom within a year, believing that separating the Euratom issue from the constitutional talks increases the chances of success.

The approach could however fail if it does not gain enough support from other states, making it critical for anti-nuclear groups across the EU to push the issue strongly.

Source and contact: Friends of the Earth Europe, mark.johnston@foeeurope.org, www.foeeurope.org

JAPAN: KEPCO SEEKS FOR ANOTHER MOX CONTRANCT WITH COGEMA

In spite of the decline in public trust for nuclear energy caused by the series of scandals and accidents including the JCO criticality accident in September 1999, the Japanese government still clings to MOX utilization at commercial light water reactors. According to Green Action in Kyoto, and Mihama-no-Kai (A citizens' group to stop NPPs including Mihama, Ohi, and Takahama NPPs) in Osaka, Japan, KEPCO (Kansai Electric Power Company) seeks for a new contract with MELOX which is owned by French Cogema.

(594.5549) WISE Japan / WISE Amsterdam - President Akiyama of KEPCO says that it will soon start negotiation, in hope to conclude a contract until the end of this year, and start MOX utilization at the Takahama NPP in Fukui Prefecture.(1)

He said that it would be difficult to consider BNFL as the vendor given previous falsifications in MOX fuel by that company.(2)

KEPCO seems to be well aware that public trust in the nuclear industries has been lost, and that resulted that the MOX fuel program has been delayed and their circumstances are tough. KEPCO stress that they will "take every opportunity to promote activities to do just this – gain back public trust in nuclear power." Regarding their plans for MOX, KEPCO says, "In 2003, Kansai Electric hopes again to conclude a processing agreement for MOX fuel."(3)

In August this year, US made a contract for test MOX fuel production with the Cogema AtPU plant in Cadarache, France. The Cadarache plant had to close in July because of seismic concerns. Nevertheless, it will possibly resume operations to produce the 4 test assemblies for the U.S. Duke Energy NPPs.(4)

Mihama-no-Kai says that this case reminds the one that took place in 1999. At that time KEPCO had concluded a contract with Cogema to order MOX Fuel at MELOX. Though the production had already started, it was cancelled on the way with compensation of 6 billion yen (US$ 56 million) by KEPCO.

The reason of the cancellation has still been unknown but is likely connected to the controversial status of the MOX program when a falsification scandal on U.K. made MOX fuel took place.

In September 1999, The Independent revealed that safety checks on MOX fuel from BNFL had been falsified. Quality control checks had by-passed by using data sheets from previous samples in order to "save time". At

that moment, BNFL was producing MOX fuel for the four Takahama reactors of KEPCO.(5)

KEPCO withdrew its application for a license to use BNFL MOX fuel and other utilities delayed their MOX use program as well.(6) KEPCO returned a shipment of BNFL MOX to the UK last year.(7)

KEPCO now appears to have re-launched its plans for MOX use and turned to French Cogema as supplier. If KEPCO reaches an agreement with Cogema it would take at least 2 years before MOX use could start.(8)

In April, Japanese citizens launched an appeal to all the states parties to the Non Proliferation Treaty to urge Japan not to go forward with separation of massive quantities of plutonium at the Rokkasho reprocessing plant, now under construction and later capable of producing 7 tons of plutonium per year. In the appeal citizens declare that there will be no future needs for plutonium as fuel. Contract with Cogema will pose more risk and danger on the company, as well as on the citizens. Besides, exploring a system for huge plutonium utilization will be a significant threat to nuclear nonproliferation.(9)

Sources:
(1) www.jca.apc.org/mihama/stop_pu/cogema_us031004.htm, only Japanese
(2) *Financial Times*, 5 September 2003
(3) www.kepco.co.jp/english/action/pdf2003/e43_50.pdf
(4) *WISE/NIRS Nuclear Monitor* 593.5543: "U.S. MOX to be fabricated at unsafe French Cadarache plant", 26 September 2003
(5) *WISE News Communique* 518.5083: "BNFL fiddling MOX quality control data", 24 September 1999
(6) *WISE News Communique* 523.5125: "Japanese demoxification", 21 January 2000
(7) *Financial Times*, 5 September 2003
(8) *Financial Times*, 5 September 2003
(9) www.greenaction-japan.org/english/news/news_E.html

Contact: WISE Japan

EARTHQUAKES

Japan has experienced three big earthquakes in Miyagi Prefecture in May and July, and in the southeastern Hokkaido on 26 September. They caused serious damage on buildings, railroads, highways, etc, and many were injured. Fortunately there was little damage on nuclear reactors except that Onagawa-3 automatically shut down, and there was a small amount of leakage of radioactive coolant water caused by the earthquake in May.

The 26 September earthquake in Hokkaido was a big one with magnitude 8.0 followed a smaller one with magnitude 7.1 on the Richter scale. More than 500 people were injured, and the one of the most frightening was the fire at petroleum refinery in Tomakomai City, south of Hokkaido. A prominent leading geologist, Dr. Sunao Ogose warns the risk and danger of the nuclear facilities throughout Japan, where there are numbers of unknown active faults that may cause big earthquakes. He stressed that we cannot rely on the current earthquake proof standard for nuclear facilities. The planned Rokkasho-mura reprocessing plant is not far from a long and huge active fault. From the seismic viewpoint, nuclear energy policy should be reconsidered and stopped, including MOX utilization.
WISE Japan

A CRITICAL, COMPARATIVE LOOK AT THE HEALTH EFFECTS OF CHERNOBYL

Imagine waking up to read in a major newspaper that the Chernobyl tragedy really wasn't as serious as we all had imagined, and that the numbers of deaths and cancers were much lower than thought – and that people can begin moving back into the region surrounding the former power plant and continue farming and living normal lives. The reality of the consequences of the Chernobyl disaster is not so bright. Still, scientists disagree about the amount of people that (will) suffer health effects due to radiation. In this article, NIRS/WISE Ukraine compares the different estimates that are made (summarized in the table).

(594.5550) WISE Ukraine - Tens of thousands of people who were involuntarily relocated after the accident in 1986 would move back to their homes.

The governments of Ukraine, Belarus, and Russia could continue reducing the amount they are spending on the effects of Chernobyl, which have been decreasing due to budgetary constraints since 1997 anyway. Ukraine alone spent nearly US$333 million in the year 2000 on providing social, health, and environmental funding to mitigation of the effects of Chernobyl.(1)

Furthermore, millions of people living downwind and in the so-called affected areas could breathe a sigh of relief. They could live their lives without being in the virtual shadow that Chernobyl casts over entire countries. People would no longer suffer from radiophobia, a Soviet-era name for fear of nuclear power. Symptoms of the present-day Chernobyl Victims Syndrome would soon disappear.(2)

Internationally, nuclear power would seem like not such a bad idea anymore, especially in light of recent blackouts that have thrown vast areas into darkness and chaos. Ukraine, Belarus, and Russia could continue with their nuclear power exporting ambitions without fearing

stigmatization as disasters-in-waiting by western lenders.

Antinuclear environmentalists could be pleased with the fact that successive generations would not be further damaged by radioactive pollution from Chernobyl.

It would be a good story, if it were true. But it is only a partial picture that appeared as an article in the *Financial Times* entitled "Calculating the Chernobyl Toll", on 15 August 2003.(3) The article, which was reprinted from the pro-nuclear journal *Nuclear Energy*, said that based on statistics from the 2000 UNSCEAR report, only one-thousand deaths can be expected from the Chernobyl disaster over time – almost all caused by between 3,300 and 7,600 thyroid cancers, which peaked in the late 1990s. (UNSCEAR = United Nations Scientific Committee on the Effects of Atomic Radiation)

Why do I say a partial picture? Among other reasons, there is insufficient research on the long-term effects of low-dose ionizing radiation, evidence from of local authorities has been overlooked, and there is a wide disagreement over the relationship between Chernobyl and other health issues, such as leukemia.

Researchers such as Dr. John Goffman, a respected professor of molecular cell biology at the University of California – Berkeley, have written extensively on the dangers of underestimating the risks of low-dose ionizing radiation. Writing in an article titled "Beware the Data Diddlers", he argues that, "evidence and logic suggest[s] that low-dose ionizing radiation may well be the most important single cause of cancer, birth defects, and genetic disorders."(4)

If you want to believe the IAEA, the UN, and the nuclear power lobby, only thirty people have died as a direct result of the accident, and as many as 1,800 thyroid cancers have occurred from about 18 million people who were children in 1986.(5) While they admit that this number may rise to 8,000, they disagree that any deaths from other cancers can be linked to radiation.(6)

But among others, Vladimir Shevchenko of the Ukrainian environmental movement Green World, believes there is verifiable proof that other cancers have been caused by Chernobyl. In a paper presented at the 9th Congress of the World Federation of Ukrainian Physicians' Societies, which was held in Luhansk, Ukraine, in 2002, Shevchenko reported that, "in 1997, the Ministry of Health Protection in Ukraine and Belarus officially and statistically confirmed an increase of leukemia in liquidators (those that helped clean up the accident) from 1986 to 1987."(7)

" The IAEA study received a great deal of attention in the public press, but it was sharply criticized in scientific journals – as it should have been. It was flawed in a number of ways."

This is supported by the findings of the 3rd International Conference on the Health Effects of the Chernobyl Accident, held in Kiev in June of 2001. Although they admit that leukemia was not found in adults or children living in contaminated areas, conference materials state, "There is a tendency of an increase of leukemia among liquidators who worked on the site in 1986 and 1987 and who received significant doses."(8)

A 1996 article by Dr. David Marples in the *Bulletin of the Atomic Scientists* claims that lung cancer rates were up to four times higher than normal for Chernobyl evacuees who were treated by doctors in the Belarusian capital of Minsk.(9)

The "Chernobyl No More" (Chernobyl +10) website also cites a twofold increase in throat cancers in Ukraine between 1986 and 1996.(10)

Dr. Marples also said recently that according to the Chernobyl Union of liquidators, twelve thousand members of the clean-up teams have died up till now, although they do not differentiate how many of them have died between radiation and other causes.(11)

While there is too little information studied over too short a period of time, it is disingenuous to simply rule out further health problems due to radiation – as the IAEA is eager to do.

Make no mistake, the IAEA is a pro-nuclear, intergovernmental agency. They have a vested interest in promoting nuclear electricity the world over, as their statutes clearly state: "The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world."(12)

Dr. Goffman cites the IAEA's inaccuracy in studying the effects of Chernobyl, writing in the same article above, "In May 1991, [Dr.] Shigematsu announced that the IAEA's international experts had found no relationship between illnesses in Belarus and Ukraine and the release of radiation from Chernobyl. The IAEA study received a great deal of attention in the public press, but it was sharply criticized in scientific journals – as it should have been. It was flawed in a number of ways."(13)

Dr. Rosalie Bertell, the chair of International Institute of Concern for Public Health (IICPH), takes a similar position about Chernobyl, stating that, "the first [IAEA] evaluation used a different epidemiological protocol in each geographical area and with different age groups, eliminated all concern for cancers as not having sufficient latency periods and failed to note the extraordinary epidemic of thyroid diseases and cancers. From the point of view of Medical

Epidemiology they failed miserably to deal with the reality. The director of this 1991 Epidemiological study, Dr. Fred Mettler, is a Medical Radiologist. There were no Epidemiologists, Public Health professionals or Toxicologists on the IAEA Team."(14)

Russian, Ukrainian, and Belarusian researchers have meanwhile been intimidated and silenced for trying to provide research data on Chernobyl.

In Belarus, Dr. Yury Bandazhevsky was imprisoned after accusing the Belarusian government of inaction related to Chernobyl. He discovered a life-threatening heart disorder called cesium cardiomyopathy in people from Chernobyl-affected areas. Bandazhevsky is currently being held in poor conditions, although Amnesty International considers him a prisoner of conscience and is leading a campaign for his immediate release.(15)

Rosalie Bertell wrote in the aforementioned article that at a conference in Kiev in 2001, "Alexey Yablokov, President of the Centre for Political Ecology of the Russian Federation, pointed out that the data used by UNSCEAR had been falsified by the State Committee for Statistics, and the officials were arrested in 1999 for this crime. He charged that UNSCEAR continued to use this falsified data to support its minimization of harm."

It was only earlier this year, in 2003, that the state security service of Ukraine, or SBU (formerly the KGB), released confidential documents related to Chernobyl from 1971 to 1988.(16) This shows that a large amount of vital information was not included from the UNSCEAR report.

It is too early to say what the death toll will be from Chernobyl. We will never be sure as long as under-funded and biased research is allowed to dominate the agenda.

Independent research should be given a place in the formulation of policy decisions, such as through the International Program on the Health Effects of the Chernobyl Accident (IPHECA), a WHO sponsored research project which was running out of funds barely after it was started.(17) Many independent researchers, including Dr. Goffman, support this project.

However many people died or are suffering from radiation, we must make something explicitly clear that the nuclear power industry and the IAEA do not want you to know: a nuclear power accident has the power to cost billions of dollars, to kill hundreds or thousands of people, to cause cancers in children, and to plunge nations into an economic and environmental nightmare unalike any other natural or man made disaster besides war.

Better alternatives exist to meet our energy needs, and we need to vigorously pursue them – and that's something the promoters of nuclear power will not concede.

Sources:

(1) *The Human Consequences of the Chernobyl Nuclear Accident: A Strategy for Recovery*, UNDP and UNICEF, 25 January 2002
(2) "Chernobyl Victims Syndrome" described at the 2001 Kiev conference on the Health Effects of the Chernobyl

Table: summarizing estimates of different studies

	Deaths	**Thyroid cancers**	**Other diseases**
Financial Times/ *Nuclear Energy* (2003)	32 in accident 1,000 years after	3,300 - 7,600	no evidence
John Goffman (1993)	317,000 - 475,000	--	low dose radiation may well be the most important single cause of cancer, birth defects and genetic disorders.
IAEA/UN (2001/2003)	30 in accident	1,800 - 8,000	no evidence
Vladimir Shevchenko (2002)	mean death rate of victims grew from 6.5 to 15.3 cases per 1,000 citizens	ten to thirty fold increase in thyroid diseases	increase of leukemia in liquidators
3rd International Conference Health Effects (2001)	--	substantial increase in thyroid cancers among children	increase in leukemia in liquidators; statistically significant for Russian group.
David Marples (1996)	31 in accident 125,000 undocumented 6,000 by extrapolation	1 in 10 children in affected areas	congenital diabetes; lung cancer 4 times higher for Chernobyl evacuees.
Chernobyl No More Website (1996)	--	rate of children thyroid cancer rose from 1 per million (1984) to 100 per million (1991)	throat cancer in Ukraine doubled

Accident
(3) *Financial Times*, Clive Cookson, et al., "Calculating the Chernobyl toll", 15 August 2003
(4) *Bulletin of the Atomic Scientists*, John Goffman, "Beware the Data Diddlers", May 1993
(5) IAEA website, 23 April 2001; at www.iaea.or.at/worldatom/Press/Focus/Chernobyl-15/thyroid.shtml
(6) IAEA website, 11 September 2003; at www.iaea.or.at/worldatom/Press/Focus/Chernobyl-15/liquidators.shtml
(7) *Medical Consequences of Chernobyl Accident from the View of the United Nations and Harsh Reality*, Vladimir Shevchenko and Oleg Musij, 9th Congress of the World Federation of Ukrainian Physicians' Societies, Luhansk, Ukraine, 2002
(8) 3rd International Conference on the Health Effects of the Chernobyl Accident, Kiev, Ukraine, June 2001
(9) *Bulletin of the Atomic Scientists*, Marples, David R., May/June 1996
(10) Chernobyl Plus Ten website; at www.ecn.cz/private/c10/
(11) David Marples, personal correspondence, 12 September 2003
(12) International Atomic Energy Agency statutes, Article 2; at www.iaea.org/worldatom/Documents/statute.html
(13) John Goffman, ibid. note: Dr. Itsuzo Shigematsu, former advisory committee chairman for the Chernobyl Project of the International Atomic Energy Agency.
(14) *Avoidable Tragedy post-Chernobyl: A Critical Analysis Journal of Humanitarian Medicine*, Vol. II, No. 3, Rosalie Bertell, Ph.D., G.N.S.H., pp 21 – 28, 2002
(15) Rosalie Bertell, ibid.
(16) BBC News, Secret Chernobyl archives released, 22 April 2003; at news.bbc.co.uk/2/hi/europe/2965375.stm
(17) *DHA News*, "WHO health programme runs out of funds while challenges mount", Dr. Gennady Souchkevitch, September–October 1995, p.12-13; at www.un.org/ha/chernobyl/fund.htm

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IN BRIEF

French industry minister proposes government decision on EPR. French industry minister Nicole Fontaine has asked Prime Minister Jean-Pierre Raffarin to approve construction of a demonstration type of the European Pressurized water reactor (EPR). On 8 October, she said that a decision should be taken "as soon as possible". Raffarin is likely to follow her advice. The formal request to the Prime Minister came earlier than expected as, only one month ago, Fontaine had said that she would make up her mind in the beginning of 2004 (at the latest) (see *WISE/NIRS Nuclear Monitor* 593. 5544: "French energy debate: wise men's committee report"). The demonstration unit is estimated to cost 3 billion Euro (US$ 3.5 billion). Anti-nuclear groups reacted furiously, as the energy debate (and a wise men's report) concluded that there was be no urgency to make rapid decisions.
***Nucleonics Week*, 9 October 2003**

Two major electricity blackouts in Europe within one week. The first big blackout occurred when Copenhagen and large parts of Sweden on 23 September were hit by a power cut, leaving up to 2 million people without electricity for three hours. A combination of problems at three Swedish reactors likely caused the failure. Oskarshamn-3 was manually scrammed and stopped delivering electricity to the grid. Almost simultaneously, Ringhals-3 and –4 scrammed after technical problems at a relay station. Because of the loss of 3,000 MW of power, the connection line between central and southern Sweden disconnected leaving as well Denmark without electricity.

Italy was hit by a blackout on 28 September, when the grid lost 6,000 MW of imported power. The failure started due to problems in a high-voltage connection line between Switzerland and Italy possibly because of storms. On their turn, French lines to Italy overloaded and disconnected. And eventually Italian electricity plants tripped in cascade and shut down, leaving 57 million people in dark. Italy is heavily dependent on electricity imports (mainly nuclear energy from Switzerland and France), at the time of the blackout as much as 25% of the country's needs.

The blackouts in Sweden and Italy look similar to the big electricity blackout in the U.S. and Canada on 14 August (see *WISE/NIRS Nuclear Monitor* 591.5532: "U.S. electricity crisis: unfortunate but entirely predictable"). In all three cases, problems at one single line or station resulted in a cascading event when more lines and stations started to trip and disconnect.
***Nucleonics Week*, 25 September 2003 and 2 October 2003**

Nuclear Free Future Awards 2003. The Nuclear Free Future Awards for people who contributed in a special way to a world without nuclear weapons and energy will be presented in Münich, Germany, on 12 October. Three Dominican sisters will receive the price for resistance for their action in October 2002, when they entered a nuclear weapons launch site in Colorado (U.S.) and hammered symbolically on the rockets. The sisters were sentenced to 2.5-3.5 years in prison. The price for scientific work and clarification will be awarded to the Iraqi geologist Dr. Souad Naij Al-Azzawi for his work on depleted uranium. The Native American Corbin Harney of the Western Soshone Nation will receive the solutions-price for his efforts to prevent his nation from becoming a nuclear waste dump. The planned Yucca Mountain repository is planned on Western Soshone land. The German scientist Prof. Inge Schmitz-Feuerhake will be awarded the special prize for her lifework on research on leukemia occurrence in the German Elbe region, near two nuclear facilities.
***Nuclear-Free News*, www.nuclear-free.com**

Toxic Turkey Award 2003. In the U.S., the "Toxic Turkey" award of the New Mexico Environmental Law Center has been won by Senator Pete

Domenici (Rep.). The price is awarded yearly to someone who "consistently and recklessly disregarded the best interests of the environment and communities in New Mexico". Domenici won the price because of his support for and introduction of anti-environmental, anti-democratic and anti-Native American legislation in the Senate. Domenici is also known for his pro-nuclear initiatives in the Senate
Press release NM Environmental Law Center, 14 September 2003

Thai government approval for Ongarak research reactor. On 29 September, the Thai government approved the construction of a 10 MWth research reactor. Despite the fact that the government had rejected the Environmental Impact Assessment for the reactor plans (see *WISE/NIRS Nuclear Monitor* 592.5538: "Thailand: EIA report Ongkarak reactor rejected"), the construction can now start. The EIA must still be improved but can now be conducted during construction. The EIA appeared to be flawed and suffered from lack of qualified personnel involved and will likely be completely redrafted. It may take as long as a year before the U.S. company General Atomics (GA) will start construction. GA wants to renegotiate the contract price and schedule that was signed in 1997
***Nucleonics Week*, 9 October 2003**

Finnish Vantaa Energia plans investment in 5th NPP. Vantaa Energia plans to invest in the country's fifth nuclear power reactor. The utility plans to take shares in a new company expected to be established as a cooperative around the fifth unit. In exchange, it will have the right to a specified amount of power from the planned unit. Vantaa Energia is 60% owned by the city of Vantaa and 40% by the city of Helsinki. The Vantaa City Council still has to make a final decision. Helsinki, through wholly-owned Helsingin Energia, is also likely to join the project. Although the 5th unit still has to be ordered, utility TVO wants even to build a sixth unit, said sources.
***Nucleonics Week*, 25 September 2003**

Ukraine wants to complete K2/R4 without EBRD. The Ukrain energy minister has informed the European Bank for Reconstruction and Development (EBRD) that his country is no longer interested in completing the K2/R4 reactors with loans from the EBRD. Involvement of the EBRD would be impossible seen the deadlines for completion work (August 2004). An EBRD loan of US$ 215 million was approved two years ago but withdrew its application one year later, saying the conditions for financing were unacceptable. Since then, new negotiations have started.
***Nucleonics Week*, 25 September 2003**

Terror fear for Welsh nuclear cargo train. A train carrying nuclear fuel through Wales in the U.K., could be tracked by terrorists, using a timetable in the guide, *Freightmaster*, bought in shops. The 2001 anti-terrorism act outlaws the disclosure of information on nuclear material transports, but an £11.75 booklet details the nuclear train's journey. The trains travel from the Wylfa NPP to Sellafield, carrying spent fuel. The only acknowledgement that the information could be dangerous comes in a short note: "for operational and security reasons, the days of operation of nuclear trains are often changed, and trains can therefore run on days other than those listed". According to Freightmaster's managing editor, the question should not be about the timetable, but about whether trains must transport nuclear waste.
***Wales on Sunday*, 28 September 2003**

Australian aborigines plan anti-dump campaign. Indigenous elders from across Australia in the last week of September held a three-day camp at 10 Mile Creek near Coober Pedy (in Southern Australia's far north) to discuss tactics to prevent a nuclear waste dump in the region. The bush camp also marked the 50th anniversary of British nuclear tests at Emu Field and Maralinga (1950s). The meeting was organized by Kupa Piti Kunga Tjuta, aboriginal women elders of Coober Pedy (see: www.iratiwanti.org). The federal government has acquired land near Woomera to build a low level nuclear waste dump (see *WISE/NIRS Nuclear Monitor* 587.5515: "Australia: planned waste dump faces opposition").
***Australian Associated Press*, 29 September 2003**

U.K. Dounreay staff contaminated by radioactivity. An investigation has begun after two workers at the Dounreay nuclear plant were contaminated early September in a shut down reprocessing facility. The men were dismantling equipment when hydraulic fluid leaked onto their protective overalls. The two men had spots of radioactivity on parts of their forearms and legs and the hair of one of them. According to a spokesman of the plant both men were cutting through pipes while working on an old hydraulic lift, once used to move the flasks containing spent fuel.
***BBC News*, 12 September 2003**

Switzerland's first nuclear plant decommissioned. Swiss authorities have begun removing the last radioactive waste from the country's oldest nuclear power station in Lucens, which was located in an underground cavern. The reactor was shut down after an accident in 1969 when a pressure tube burst, creating a power surge, and the reactor malfunctioned. Fuel elements partially melted and some radioactive gas escaped from the cavern and the reactor had to be shut down. Some 300 tons of material are now being transported 160 kilometres to an interim storage site in the north of the country. The Vaud canton will use the decontaminated space to store cultural and archaeological goods. The reactor was of an experimental gas-cooled heavy

water-moderated (GCHWR) design and had opened in 1962.
***Neue Zürcher Zeitung,* 18 September 2003**

Italian spent fuel sent to Sellafield. On 22 September, a shipment of spent fuel from shut down NPPs in Italy was sent to Sellafield for reprocessing. Greenpeace activists chained themselves to the rails and blocked the transport for several hours. It was the fourth shipment since April in a planned series of 13, totalling 53.3 tons of spent fuel.
AFP, 22 September 2003

Small leak at Japanese Hamaoka-1 reactor. A small radioactive leak occurred at Hamaoka-1 on 17 September. Officials discovered that about 1.6 gallons (6 liters) of radioactive water had leaked from the reactor. The leak from a tunnel in the reactor's waste processing system was discovered during regular inspections. In November 2001, Hamaoka-1 was shut down after a pipe burst and leaks at the control rod mechanism system (see *WISE/NIRS Nuclear Monitor* 558.5339: "Japan: a grave situation at Hamaoka BWR").
***Associated Press,* 17 September 2003**

South African Koeberg PBMR to cost R10 billion. The prototype PBMR planned at Koeberg is estimated to cost R10 billion (US$ 1.6 billion). PBMR Ltd, the company developing the reactor, already spent R1,5 billion (US$ 230 million) on the project and looks for overseas investors. The company asked the government to make an "unconditional commitment" to fund the next steps of the project in order to attract new investors. Electricity utility Eskom has signed an agreement to order ten PBMRs if the demonstration model at Koeberg will be successful. According to Earthlife Africa, the costs should have been made public during the environmental impact assessment.
***Cape Times,* 11 September 2003**

Dutch Queen opens HLW storage facility. Queen Beatrix of the Netherlands opened on 30 September a storage bunker for high-level waste at the Borssele interim storage COVRA. The building will house later this year spent fuel elements from research reactors and vitrified reprocessing waste from France and the U.K. WISE and other NGOs protested against the opening by the Queen. In a letter to her, WISe demanded not to go because the building would be no solution for the waste problem.
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WISE/NIRS NUCLEAR MONITOR

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