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EUROPEAN UNION OFFERS HELP TO BUILD ANOTHER CHERNOBYL

The European Commission is in discussions with Russia to provide financial help for the completion of a nuclear reactor of the same type that caused the 1986 Chernobyl disaster.

(582.5483) Friends of the Earth Europe – This was revealed in a document obtained by Friends of the Earth Europe (1). The unfinished Kursk-5 reactor, situated 300km south of Moscow, has been listed for possible funding under the Euratom Loans scheme, which the European Commission is proposing to significantly expand (2).

Kursk-5 is a 1000-megawatt RMBK type reactor, one of the first generation of Soviet-designed stations. Construction began in December 1985 - just five months before the world's worst nuclear accident at Chernobyl in neighboring Ukraine – but work was later suspended due to a lack of funds. Kursk-5 is the only RMBK plant anywhere in the world still to be completed.

The Euratom Loans scheme, introduced in 1977 to further promote nuclear power in line with the Euratom Treaty, allows the European Commission to facilitate loans for the development of nuclear projects, subject to Member States agreeing an overall limit. In November last year, the Commission proposed increasing this "ceiling" for Euratom loans from 4000 to 6000 million Euros (US$4.3 to 6.4 billion), although they did not specify publicly what projects the additional funds would be spent on.

FOE Europe's Nuclear Campaigner, Mark Johnston said: "EU support for building dangerous reactors is wrong and should stop. It is crazy to increase the risk of another disaster by aiding a new power plant that is the same type as Chernobyl."

"This scandal casts grave doubt over the credibility of the Commission's claim to be acting in the interests of atomic safety. It is becoming clear that the real motive is more sinister, to save a dying nuclear industry at any cost. The Commission cannot be trusted with nuclear safety when it also retains a duty to promote nuclear."

"Euratom loans and the Euratom Treaty itself are out of date, biased and undemocratic. They should both be scrapped. Friends of the Earth is calling the European Convention to support abolition of Euratom under the new EU constitution."

Vladimir Slivyak from WISE Russia commented: "The EC plan to fund Kursk-5 is very dangerous. Since the RBMK explosion in Chernobyl in 1986, no such reactors were funded anywhere in the world. It's just totally unacceptable that another 'Chernobyl' will be built in Russia. It's one of two: idiotism or environmental genocide" (3).

Notes:

1. Friends of the Earth Europe press release, 23 January 2003. The document is a so-called "Non-paper" that was distributed by the Commission to Member States following questioning at a meeting on the 10 December 2002 regarding the proposal to increase the Euratom ceiling from 4000 to 6000 million Euros. The document is available at www.eu-energy.com/pdfs/euratomloanscomm-nonpaper.doc. The decision on increasing the loans ceiling

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is due to be considered by the Council of Ministers (ECOFIN) in the near future.
2. As well as Kursk-5, the document mentions five other reactors, all VVER (Russian equivalent of the PWR): Kalinin-3 and -4, Balokovo-5 and -6 and Rostov-2. In the *World Nuclear Industry Handboook 2000,* only two of these reactors (Kalinin-3 and Balokovo-5) are listed, together with Kursk-5, as "under construction." Kalinin-4 is listed as "suspended or indefinitely deferred", Balokovo-6 as "proposed" and Rostov-2 as "reasonably firmly planned".
3. Email from Vladimir Slivyak, 24 January 2003

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LES DELAYS LICENSE APPLICATION

Louisiana Energy Services (LES) announced on 29 January that it will delay submission of a license application for its proposed uranium enrichment plant for six to eight weeks. The LES annoouncement comes amid new controversies over waste and proliferation.

(582.5484) NIRS - The move follows the tabling by the Trousdale County Commissioners on 27 January of a critical vote on rezoning land that would allow LES to build its plant in central Tennessee. The LES announcement brought immediate suspicion that the company is trying to avoid providing details about the project until after it has obtained local approval for the plant. Said Will Calloway of the Tennessee Environmental Council, "It appears LES does not want all the information in the application made available to the public."

The Trousdale County Commissioners first voted to create a new zoning category that would accommodate such a facility, but decided not to take a vote on the actual zoning. The vote now is expected to take place on 25 March; under county law, two votes must be taken at two different meetings, so it appears it would be at least April before a final vote could take place.

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Editorial team: Stuart Field, Robert Jan van den Berg (WISE Amsterdam), Michael Mariotte (NIRS). With **contributions** from Citizens' Nuclear Information Center (Japan), Friends of the Earth Europe, Watercourse cc (South Africa) and WISE Ukraine.

The next issue (583) will be mailed out on 21 February 2003.

While LES spokeswoman Nan Kilkeary tried to put a positive spin on the county's action, describing it as "a real step forward," it appeared to indicate a broadening of the opposition to the plant. Several months ago, many observers believed Trousdale County's approval of the project was basically a done deal.

The plant would be located primarily in Trousdale County, on land formerly owned by the Tennessee Valley Authority, which it had used for its abandoned Hartsville nuclear power complex.

But the land itself is owned by the Four Lake Regional Industrial Development Authority, which is made up of five different counties: Trousdale, Smith, Sumner, Wilson and Macon. While Trousdale has the biggest influence, it is not clear that the county could accept the plant over the opposition of its neighbors.

Already Smith County has voted 22-0 against the plant, and 24-0 in favor of a public referendum on the issue. A straw vote (unofficial poll) of county commissioners in Macon County was 11-0 against the project. Three towns in the area, Cookeville, Lebanon, and Wilson have taken votes against the plant, and a public meeting is scheduled for Sumner County February 24. A meeting in Lebanon brought more than 250 people together in mid-January, most against the plant.

LES is a consortium dominated by the European firm Urenco. Other members include Westinghouse (now owned by Urenco partner British Nuclear Fuels Ltd.), the Canadian uranium mining company Cameco, and U.S. nuclear utilities Exelon, Duke Power and Entergy Nuclear.

Urenco and nuclear proliferation
Although considerable concern already had been raised about Urenco's record on nuclear proliferation, including in the recently-released documentary movie *Stealing the Fire*, an article in the 21 January issue of *Time Magazine* shook many Tennessee politicians. Titled "Nukes: To Pyongyang from Nashville?" the article quoted "senior Bush appointees" as having misgivings about allowing Urenco to operate in the U.S.

The article noted that Urenco has been "linked to leaks of enrichment technology to, yes, Iran, Iraq, and North Korea—as well as to Pakistan."

Some of these links have been well known and arose when LES first tried, unsuccessfully, to obtain a license to build a uranium enrichment plant in the U.S., in the early 1990s in Homer, Louisiana.

Pakistan's nuclear program—which has resulted in testing of atomic weapons—blossomed when a Urenco employee stole blueprints for the company's centrifuge design and brought them home to Pakistan. It is believed that the technology then migrated to Iran, and more recently to North Korea.

The episode is very well documented and even has had a book (in Dutch)

25 YEARS AGO

NIRS and WISE both celebrate their 25th anniversaries this year. This is the second 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 1 of *WISE Bulletin* we wrote about one of the biggest anti-nuclear demonstrations in The Netherlands, against the Urenco uranium enrichment plant at Almelo. The demonstration was against the enlargement of the facility and planned export of uranium to Brazil: "Nation-wide mobilisation in the Netherlands, in cooperation with several groups in Federal Germany, lead up to a demonstration of 50,000 people, on March 4, at Almelo. The aim was to express popular resistance to the proposed enlargement of the uranium enrichment plant located there. It is considered that this would boost the spread of both civil and military uses of nuclear power". (*WISE Bulletin* 1, May 1978)

Now

The plan to enrich uranium for export to Brazil (which had not yet signed the Non-Proliferation Treaty) met big opposition. Eventually, the enrichment work was done at Capenhurst (UK) in order to avoid export licensing problems in the Netherlands. The fact that civil nuclear technology can be misused for military weapons construction was demonstrated by the espionage of Urenco technology by Pakistani Abdul Qadir Khan. He stole enrichment technology from Urenco to develop a nuclear weapon for Pakistan. Khan was recently accused of having supplied the same technology to North Korea, which he denied. (Country Status Reports UK and Netherlands, Laka Foundation, February 1995; and *WISE/NIRS Nuclear Monitor* 581, 17 January 2003)

In 1978, Urenco planned to build a 1000 tons SWU/y (Separative Work Unit per year) plant. Presently, Urenco's plant at Almelo has a capacity of 2,500 tons SWU/y and is planning to extend it to 3,500 tons SWU/y. The Urenco consortium (Netherlands, United Kingdom and Germany) has a worldwide share of 12-15% on the uranium enrichment market (Information from Laka Foundation, 30 January 2003). Urenco is also part of the Louisiana Energy Services (LES) consortium planning to build a uranium enrichment plant in the U.S. state of Tennessee.

written about it; a related website, www.atoomspionage.com, includes some English information on the issue.

The Urenco-Iraq connection first arose in the mid-1990s, when United Nations weapons inspectors found evidence that Iraq's attempts to develop a nuclear weapons capability were based on Urenco centrifuge designs. It was later learned that German contractors for Urenco had supplied Iraq with critical information and blueprints. While no one has suggested that Urenco has deliberately allowed its technology to be taken by previously non-nuclear, potentially hostile countries, Urenco's apparent inability to protect its highly-classified designs has raised serious questions about the company's capabilities. Moreover, activists learned only recently that in 1989-90, Urenco hosted 22 Iraqi engineers for training sessions at its Gronau, Germany plant to learn to operate Urenco technology.

A press statement by Urenco in response to the Time article stated, "Urenco would like to affirm that this issue dates back more than 20 years." This is a clearly (and typically) disingenuous statement: while the diversion of Urenco technology to Pakistan does date back that far, the Urenco-Iraq connection is much more recent.

The *Time* article prompted state Rep. Bob Briley to introduce legislation that would levy a tax on private uranium enrichment plants; funds form the tax would be used to develop non-nuclear renewable energy sources.

LES and radioactive waste

Another problem causing problems for LES is the huge amount of waste the plant would produce. This waste, composed predominately of uranium hexafluoride (containing depleted uranium) is both radioactive and chemically hazardous. At the size plant LES has said it wants to build (LES has not yet submitted an actual license application, so its final plans are uncertain), about 400 14-ton canisters of this waste would be created each year and stored onsite.

LES has tried two main approaches to address concerns over the waste. First, it has attempted to downplay the hazards associated with the material, claiming that residents' fears about the waste are exaggerated. Of course, that is difficult to do with a substance that, when it is exposed to moisture, turns into hydrofluoric acid, which will eat through almost anything.

LES also has said that it will limit onsite storage of the waste to an approximately five-year inventory. The problem with that is that there is no place to put uranium hexafluoride waste. There are already some 700,000 tons of the material in the U.S.—mostly sitting at existing uranium enrichment plants. There has been talk of building a facility to convert some of it to a less hazardous form, but those plans have been delayed by lawsuits from competing firms and even if built, it could take centuries to convert just the waste that now exists.

LES suggests that federal law requires the Department of Energy to

take the waste that LES produces; it is unclear and untested whether this is the case, but the fact remains that DOE already controls most of the depleted uranium already produced, and has no place to put it. DOE might be forced to take custody of the LES material, but the agency certainly has no place to move it to.

More recently, LES president George Dials has suggested publicly that the company may send the waste to Envirocare in Utah. But according to well-placed sources, LES has never even talked to Envirocare about the issue, certainly not at any deal-making level. And Envirocare's disposal prices, according to these sources, would be prohibitive for the volume of waste LES would create. Moreover, it is not even clear that Envirocare is licensed to accept this waste, which is radioactive for millennia as well as hazardous, and doesn't fall neatly into any Nuclear Regulatory Commission waste classification.

In other words, LES' promise to keep only a five-year inventory of waste onsite means, at this point at least, that LES would operate for only five years or would have to attempt to change its agreement. So far, the company has no other alternative.

Source and contact: Michael Mariotte at NIRS

EARLY SITE PERMITS FOR NEW U.S. REACTORS

A U.S. Nuclear Regulatory Commission official said the agency expects three different nuclear utilities to submit applications by the end of the year for "early site permits" to build new nuclear reactors. The official, Lee Banic, who is in charge of an NRC project to establish procedures for agency reviews of new reactor sites, made the prediction at a public meeting on 28 January.

A Nuclear Energy Institute official, Robert Bishop, told the *Toledo Blade* that the three utilities are Dominion Energy, Entergy Nuclear and Exelon. The *Monitor* previously has reported that Exelon is considering applying for a permit at its central Illinois Clinton site and that Entergy is considering one for its Grand Gulf site, where it has a mothballed reactor, Grand Gulf-2. Dominion is considering a permit at its two-unit North Anna site in central Virginia, less than 100 miles from Washington DC. The site was originally intended to be four units, but two of them were abandoned in the early 1980s less than 7% completed.

The three utilities also have been named in some South Carolina and Georgia newspaper articles as expressing an interest in building a new reactor at the Savannah River Site in South Carolina.

Under the early site permit process, utilities can get NRC approval for all site-related issues (for example, adequacy of water supplies, etc.) before committing to building a reactor, or even settling on a reactor design. The permit is good for 20 years and can be renewed for another 20 years. When the utility finally decides to build a reactor, these issues cannot be raised by the public in licensing hearings.

None of the utilities has so far said it wants to build a new reactor; instead, it appears that they want to test the early site permit process to see how it works and how much opposition develops. Permit in hand, the utilities can then wait years, or decades to seek a construction/operating license. Nuclear Energy Institute documents released last year indicate that the nuclear industry wants the federal government to provide substantial funding for any new commercial reactor project; at least in the present climate, private utilities do not seem to want to use their own money on such a risky endeavor.

Michael Mariotte, NIRS

SERIOUS INCIDENT VINDICATES BELGIAN NUCLEAR PHASEOUT

The Belgian Senate passed a bill on 16 January to shut down the country's nuclear power stations when they reach 40 years of operation. The wisdom of this decision was confirmed by recently-published news of an incident last year at one Belgian reactor.

(582.5485) WISE Amsterdam – The crucial phase in the nuclear phase-out bill came last December, when the Chamber of Representatives (the lower house of the Belgian parliament) approved the bill (1). Now that the Senate has also passed the legislation, there is one final formality: the bill needs to be signed into law by the king. This is expected in the next week or so.

With 58% nuclear electricity, Belgium is the third most nuclear-dependent country in the world. Opposition politicians remain skeptical about the phaseout, claiming that it will be impossible to meet Belgium's Kyoto commitments without nuclear power – a view rejected by Olivier Deleuze, Secretary of State for Energy and Sustainable Development (2).

"Doel will stay open"

Luc Mampaey, general director of the Doel nuclear power station, which has four of Belgium' seven PWRs, also said (in a newsletter produced by the plant's PR department and distributed in neighboring villages)

that it would not be easy to meet Kyoto targets when the reactors are shut down (3). He tried to allay fears that safety would be neglected by saying that the plants would continue to be upgraded, with replacement of the steam generators of Doel-2 in 2004. Subsequently it was announced that Westinghouse had won the contract to replace the steam generators (4).

However, Mampaey was quoted in Energiewereld.nl as saying that "reality will leave the law behind", and utility Electrabel will ignore the phase-out law and keep Doel open beyond 2015 when the first two reactors are slated for closure (5).

Incident at Tihange

The danger posed by nuclear power plants was illustrated by the recently-released details of an incident last year at Tihange, Belgium's other nuclear power station (6). On 22 November 2002, Tihange-2 was in "hot shutdown" mode: the reactor was not critical, so not producing electricity, but was nevertheless under high pressure and temperature.

Things started to go wrong when a "wrongly scheduled test" was carried out. This test caused a relief valve to open on the pressurizer, so that the pressure in the primary cooling system fell rapidly from 155 bars to about 85 bars.

The pressurizer plays the vital role of maintaining the pressure in the primary circuit, since if the pressure falls too low, the coolant starts to boil, leading to overheating of the fuel rods and, in the worst-case scenario, a meltdown.

The pressure drop triggered a number of emergency systems, which started injecting water into the primary cooling system in order to maintain pressure and prevent a meltdown. While these emergency systems did their job, the key action needed to stop the pressure drop was to stop the leak by closing the valve. However, "due to communication problems it took 3 minutes to get in contact with the operator performing the test and to close the valve."

Even then, the problems were not over, since a fault "not related to the testing conditions" meant that "the protection system that should have closed the discharge line at about 138 bars was inhibited in all safety related trains". The report is not clear what exactly happened, although a fault that affects all safety systems is obviously serious.

The incident was classed as Level 2 on the 7-level International Nuclear Event Scale (INES), because of serious "degradation of defense in depth" at the reactor. Incidents of this severity generally occur only a few times per year in the world.

The "wrongly scheduled test" seems particularly bizarre, for two reasons. Firstly, one might think that reactor operators would take particular care to avoid carrying out tests wrongly, since this was the cause of the Chernobyl disaster. Secondly, personnel at Tihange, including reactor operators (7), have gone on strike in the past (e.g. in 2001), citing safety concerns as one of their reasons for striking (8), so one might think that they would be especially safety-conscious.

Tihange-2 has used MOX fuel since 1995 (9), although there is no indication in the report that the use of MOX played any role in the incident.

References

1. *WISE/NIRS Nuclear Monitor* 579.5474, "Belgian parliament approves nuclear phaseout"
2. *Nucleonics Week*, 23 January 2003
3. *Doelbewust*, December 2002
4. *Platts Nuclear News Flashes*, 17 January 2003
5. energiewereld.nl, 24 January 2003
6. www-news.iaea.org/news (incident report dated 16 December 2002)
7. *WISE News Communique* 553, "In Brief"
8. *La Meuse*, 15 May 2001
9. *WISE News Communique* special edition (no. 469-470): "The MOX Myth"

Contact: WISE Amsterdam

MEXICAN NUCLEAR NIGHTMARE

The Mexican nuclear industry is very small, with just one nuclear power station, Laguna Verde, consisting of two General Electric BWRs. However, the history of nuclear incidents and repression of whistleblowers at this one plant makes it unique.

(582.5486) WISE Amsterdam –

Reports of incidents at Laguna Verde seem to keep turning up. Last year, a local activist group, the Veracruz Mothers' Anti-Nuclear Group (1), obtained 22 previously unpublished documents of incidents at Laguna Verde. These included repeated discharges of radioactive water into drains, emergency radiation alarms that were wrongly set by a factor of 10, and obsolete, unreliable equipment (2).

These 22 documents came on top of a report by the World Association of Nuclear Operators (WANO) in 1999, which described the safety of the plant as "bad", and a report from the German testing organization TÜV in 2001, which drew similar conclusions.

These damning international reports followed a long history of incidents at the plant. Whistleblowers who drew attention to these incidents were threatened, fired, and in one case allegedly kidnapped and tortured (3).

All the while, the Veracruz Mothers kept up their long-standing campaign to get the plant closed. The importance of this campaign was underlined by yet another serious incident last year, which was recently made public.

Level 2 incident

The incident in the plant's no.1

MEDICAL TECHNICIANS CONTAMINATED

On 28 November 2002, a technician of the Nuclear Medicine Department of the Medical Center "Centro Médico Siglo XXI" reported that he and eight of his co-workers had been contaminated with radioactive iodine. The worker first noticed the problem when radiation alarms went off when his co-workers were around. Subsequent tests found that they had been internally contaminated with iodine-131 and had received doses to their thyroid glands of up to 5 times regulatory limits. On 12 December 2002, the Mexican nuclear safety authority reported the incident to the IAEA, rating it Level 2 on the International Nuclear Event Scale (INES).
www-news.iaea.org/news

reactor occurred on 12 July 2002 but was reported to the International Atomic Energy Agency (IAEA) on 18 December 2002. The report became public when the IAEA recently launched a web site containing reports of significant nuclear accidents and incidents (4).

The reactor's power was being increased following "inspection and repair of small leaks in the main steam tunnel". However, "human failure of the main control personnel to control reactor pressure" triggered an automatic shutdown of the reactor. Only at this point did it become apparent that the Reactor Core Isolation Cooling System (RCIC) was inoperative, and indeed "had been inoperative for at least a year".

According to the report, the fault in this safety system went undetected for so long because of "deficiencies in the surveillance procedures and failure of main control room personnel to detect this condition when this system was required while executing routine activities in July 2001".

The incident was classed as Level 2 on the 7-level International Nuclear Event Scale (INES) because of the severe "degradation of defense in-depth" at the reactor.

References

1. For more information on the group (Grupo Antinuclear de Madres Veracruzanas) see *WISE News Communique* 465.4612, "Mexico: Mothers protest against Laguna Verde Plant"
2. Greenpeace Mexico bulletin 253, 10 September 2002
3. *Bulletin of the Atomic Scientists,* July/August 2002
4. www-news.iaea.org/news

Contact: WISE Amsterdam

UPDATE ON TEPCO SCANDAL

The Tokyo Electric Power Company Inc (TEPCO) plans to cease operating all of its 17 nuclear reactors to conduct inspections after last year's revelations of falsified tests at Japanese nuclear power stations.

(582.5487) CNIC - The inspections are being carried out to ensure the safety and integrity of nuclear structural components in response to the recent revelation of the falsification of leak rate inspection of the reactor containment found in the Fukushima I-1 reactor (1). Table 1 summarizes the current status of TEPCO's status of Nuclear Power Plants (NPPs) as of 28 January 2003. At this point, there are 11 TEPCO reactors whose operation is suspended. It is possible that by 15 April, all 17 plants will be temporarily shut down for maintenance services.

The Committee for the assessment of safety and integrity of nuclear structural components was set up in the government to examine 11 nuclear reactors in which cracks have been found in the core shroud (a steel cylinder surrounding the core of the reactor). These are: Fukushima I-4, Fukushima II 2, 3, and 4, Kashiwazaki-Kariwa 1, 2, and 3 (TEPCO), Onagawa 1 (Tohoku Electric Power Company Inc.), Hamaoka 1, 2, and 3 (Chubu Electric Power Company Inc.) (2). These NPPs, none of them in operation now, expect to be given permission by the Committee to resume operation.

At a meeting on 21 January, the Nuclear Industrial Safety Agency (NISA) gave its assurance of the safety of Kashiwazaki-Kariwa 3 and Hamaoka 4. In fact, the meeting was

COURT HALTS MONJU RE-START

Japanese anti-nuclear campaigners received a welcome boost after a court decided on 27 January 2003 to revoke approval to operate the Monju prototype fast-breeder reactor. The Monju decision is the first time that plaintiffs have ever won a nuclear related court case in Japan.

Monju has been shut down since an accident in December 1995, in which 700 kilograms of liquid sodium escaped from the secondary cooling system. The liquid sodium, which is highly chemically reactive, caught fire, causing considerable damage (see *WISE News Communique* 560.5353, "Japan: Protest against planned reopening of Monju" and 445.4402, "The Monju accident fall-out").

The recent ruling by the Kanazawa branch of the Nagoya high court stands in contrast to an earlier ruling in 2000 by the Fukui district court, which rejected local residents' demands for the closure of Monju (see *WISE News Communique* 527.5154, "Japan: Court rules against closing of Monju").

The government has said that it will appeal against the ruling that Monju must close, and some ministers want to pursue the appeal all the way to the Supreme Court.
WISE Japan; www.asahi.com, 29 January 2003

open for the public and observers who attended said that the meeting never reached the agreement to resume operation of those two nuclear reactors; the Chair of the Committee announced at the press conference later that there was an agreement in the committee.

The consensus does not necessarily mean the immediate restart of the suspended nuclear power plants. While the "consensus" was arbitrary created among the Committee members, the consent from citizens residing near the power plants has yet to be established.

The Governor of Niigata Prefecture as well as local citizens have viewed the scandal as distrustful act and declared that they would make their own judgments. TEPCO plans to set up a "Regional Information Committee," and invite those who are critical of nuclear energy to make an agreement with them. On this basis, there is little prospect of resuming operation of TEPCO's power plants.

On the other hand, Chubu would rather restart operation of Hamaoka if it retains the consent from a Prefectural governor and/or mayor of the town concerned, than attempt to set up a framework to reach a mutual agreement between the government, electric companies, and local citizens.

Table 1. Status of Nuclear Power Plants Operated by TEPCO as of 28 January 2003

Plant Name (MW)	In Operation	Status	Condition
FI-1 (460)	No	I + PI	Halted from 26 Oct 2002. NISA ordered one year suspension from 29 November 2002.
FI-2 (784)	Yes	Op	PI from 31 March 2003
FI-3 (784)	No	PI	Halted from 18 July 2002
FI-4 (784)	No	I + PI	Halted from 16 Sept. 2002
FI-5 (784)	Yes	Op	PI from 11 Feb. 2003
FI-6 (1100)	Yes	Op	PI from 15 Apr. 2003
FII-1 (1100)	No	PI	Halted from 7 January 2003
FII-2 (1100)	No	I	Halted from 3 Sept. 2002
FII-3 (1100)	No	I + PI	Halted from 16 Sept. 2002
FII-4 (1100)	No	PI	Halted from 13 Oct. 2002
KK-1 (1100)	No	PI	Halted from 3 Sept. 2002
KK-2 (1100)	No	PI	Halted from 20 Sept. 2002
KK-3 (1100)	No	PI	Halted from 10 Aug. 2002
KK-4 (1100)	No	PI	Halted from 7 Jan. 2003
KK-5 (1100)	Yes	Op	I from 1 March 2003
KK-6 (1350)	Yes	Op	PI from 27 January 2003
KK-7 (1350)	Yes	Op	I from 29 March 2003

PI = Periodic inspection, I = Inspection related to the scandal, Op = In Operation
F: Fukushima NPP, KK: Kashiwazaki-Kariwa NPP

Although nuclear energy accounts for almost 40% of the TEPCO's share of electricity generation, it can be substituted by other sources (coal, petroleum, and natural gas) during the winter if all the NPPs were simultaneously shut down. However, the supply of electricity would be short during the summer (from July to September) as the demand for air conditioning increases.

With such concern in mind, the TEPCO published advertisements in several newspapers for two consecutive days to call for more energy conservation. It is true that the increased demand for air conditioning comes from the residential sector, however, the use of electricity from the commercial and industrial sectors significantly contributes to the amount of electricity required during the summer.

Citizens around the nation have collected 3,180 signatures for a legal action prosecuting the heads of TEPCO for obstruction and fraud among other charges, which was filed in the Tokyo, Niigata, and Fukushima District Public Prosecutors Offices on 12 December 2002. On 24 January, the Niigata District Public Prosecutors Office also accepted the bill of indictment. After this, the Public Prosecutors Offices will start legal investigations of the TEPCO scandal.

Notes:
1. See *WISE/NIRS Nuclear Monitor* 578.5471, "Update on the TEPCO falsification scandal" for a more detailed account of the TEPCO scandal.
2. See *WISE/NIRS Nuclear Monitor* 574.5441, "Japan: nuclear scandal widens and deepens" for an account of the other companies affected by the scandal.

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MISSING PLUTONIUM

A staggering 206 kilograms of plutonium - enough to make 30 or 40 atomic bombs – is unaccounted for after 25 years of operations at the Tokai-mura reprocessing plant. Japan and the Inetrnational Atomic Energy Agency (IAEA) have been aware of this problem for years, yet have apparently been unable to resolve it. Dr. Edwin Lyman, President of the Nuclear Control Institute (NCI), commented, "Until the discrepancy is resolved, one cannot rule out the possibility that the plutonium was diverted for weapons use by states or terrorists".

NCI press release, 28 January 2003

SOUTH AFRICA PBMR RECOMMENDATION IMMINENT

As this *WISE/NIRS Nuclear Monitor* goes to press, the government of South Africa's Western Cape Province is about to submit its recommendation to the national government on the construction of a Pebble Bed Modular Reactor (PBMR) at Koeberg. Here is a summary of the developments leading up to this decision.

(582.5488) Watercourse cc – On 15 January 2002, South African engineering firm Murray & Roberts, in a joint venture with US company, Stone & Webster, and supported by empowerment contractor Proman Management Services, was awarded a contract to supply professional services for the development of the PBMR.

Murray & Roberts was responsible for the basic design and feasibility study of a nuclear fuel plant for the PBMR, to be based at Pelindaba in the North-West Province.

EIA and waste

After completion of the controversial Environmental Impact Assessment (EIA) for the PBMR, Angela Andrews and Adrian Pole of the Legal Resources Centre compiled a 150-page legal analysis of the EIR on behalf of local activist group Earthlife Africa with expert evidence gathered from a range of respected academics and public officials.

In the meantime, the period for public comment had closed and the Environment Impact Report was circulated among four affected provinces: the Western Cape (Cape Town), Kwazulu-Natal (Durban), Gauteng (Johannesburg) and the North-West (Pelindaba) for comment.

Cape Town is being considered for the siting of the demonstration reactor; Durban for the importation of enriched uranium; and Gauteng/ North-West border for the site of the fuel fabrication plant, to be run by the Nuclear Energy Corporation of South Africa (NECSA).

Oddly enough, the entire critical issue of waste management has been struck off the agenda - to be attended to by a National Radioactive Waste Management Policy in the distant future - even while Koeberg continues to store its own high-level waste, and the Northern Cape's Vaalputs low-level and medium-level waste facility continues to be governed by NECSA.

Attempts to gain justice for six casual workers exposed to dangerous levels of radioactivity in a waste spill through an approach to the National Nuclear Regulator have also proved fruitless.

The next phase

On 3 December 2002, a PBMR (Pty) Ltd spokesperson was quoted as saying: "Our investors need to give their approval for the next phase of the project to proceed. The detailed feasibility study [DFS] is complete and the business case has been completed for the investors to review. We also still need a record of decision from the Department of Environmental Affairs [and Tourism, or DEAT] for the Environmental Impact [Report, or EIR] that our consultants submitted at the end of October." (1)

The PBMR spokesperson said that they had recently begun a test on the PBMR power conversion system: a micro-turbine model, which had been set up to represent "the first closed-cycle, multi-shaft gas turbine in the world".

The model was designed and built by the engineering faculty at Potchefstroom University, under Gideon Greyvenstein, with technical input from the PBMR project team.

Silver Protea Nuclear Empowerment Consortium hopes to tender for nuclear fuel supply as well as an equity stake in the PBMR project. PBMR (Pty) Ltd had originally suggested that a 10% stake be made available for "black empowerment".

Chairman Dupree Vilakazi claims that there were 13 "community organisations" on board with another five board members, including: Kelvin Kemm, (a long-standing member of the nuclear industry), Leon Louw (CEO of the Free Market Foundation), Tsepo Mahlaba, and Cyril Gamede. Non-executive financial officer is Derri Farenheim, formerly of construction company Stocks and Stocks (2).

In the week leading up to 31 January 2003, all eyes were on the Western Cape Province, suggested home of the PBMR.

While Premier Marthinus van Schalkwyk of the former Apartheid Government's National Party (reconstituted as the "New National Party" with massive backing from the Coloured working class in the province in the 1990s) was fully supportive of the development, officials within the Provincial Administration and the City Of Cape Town (pop. roughly 3 million) were not so sure.

Notes:

(1) *Business Report,* Cape Town, 3 December 2002
(2) *Business Report,* Cape Town, 21 January 2003

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INTERNATIONAL CONSORTIUM TO BUILD CHERNOBYL "SHIELD"

The design for a "shield" to cover the crumbling sarcophagus over the remains of Chernobyl-4 is nearly completed. Yet there is also pressure to re-start the other three reactors at Chernobyl.

(582.5489) WISE Ukraine – In October 2002 a proposal of restarting the closed units at the Chernobyl nuclear power plant was brought about by a group of ministers led by Oleg Panasovsky.

The ministers claimed that closing the plant hurt Ukraine's economy, stating that closure was, "the largest mistake in the history of power engineering" (1). Over a hundred supporters demonstrated in Kiev to support reopening the doomed reactors, mostly former employees and their families.

Chernobyl is the site of the world's worst nuclear accident, when on April 26, 1986, a meltdown occurred in the plant's Number 4 reactor, sending thousands of tons of radioactive particulates into the atmosphere (2).

The total damage from the accident is incalculable, but tens of thousands of people were relocated and Ukraine still spends up to 5 per cent of its GDP on mitigating the human and environmental effects of the disaster (3).

Ukraine closed the last reactor, Number 3, at Chernobyl in December 2000 after signing a memorandum of understanding in 1995 with the G-7 and European Commission, which pledged US$1.48 billion in support for building new units at Rivne and Khmelnitsky (K2R4), in addition to creating the Chernobyl Shelter Fund (CSF) which pays for shutting down and cleaning up the Chernobyl site (4).

Units 1 and 2 were shut down in 1997 and 1991 respectively (5).

Now the G-7 and European Union are nearly completing designs for an improved shield to be built over the crumbling sarcophagus that covers the Number 4 reactor. The Russian designed sarcophagus was built in 1995, and later repaired in 1999. The shield is running a cost of US$250 million, and will be built with 20,000 tons of steel.

The exact measurements won't be known until Bechtel International Systems, the contractor, completes them sometime in the middle of 2003, but will be about 120 meters high, 270 meters long, and 13 meters thick.

> The structure will contain materials for up to 100 years, or until Ukraine decides what to do with 200 tons of uranium and one ton of lethal plutonium

The structure, which may be the largest moveable structure ever built, will glide over the Number 4 reactor on specialized rails to as not to expose construction workers to radioactivity (6).

The structure will contain materials for up to 100 years, or until Ukraine decides what to do with 200 tons of uranium and one ton of lethal plutonium. These radioactive materials are contained within a thick soup of 30 tons of fuel dust and 2000 tons of combustibles, which technicians plan to neutralize with cranes and robots once the shield is in place (7).

Twenty-eight nations including the G7 and the EU have pledged US$768 million to pay for the Shield Implementation Project (SIP), as well as for significant improvements in the concrete sarcophagus in 1999, and for further clean-up (8).

The shield is being developed by the US Department of Energy and the European Union's TACIS project, in collaboration with Ukrainian authorities. The European Bank for Reconstruction and Development (EBRD) is managing the account fund as well as providing financing for the deal.

The Chernobyl Shelter Fund, of which the SIP is a part, is the EBRD's largest environmental project.

Dr. Hans Blix, the chief UN weapons inspector in Iraq, was elected at Chair of the Assembly of Contributors – the governing body of the Chernobyl Shelter Fund – in 1998, and again in 1999. Dr. Blix was the Director General of the International Atomic Energy Agency at the time of the Chernobyl disaster (9).

Uranium smuggling

In other news, several men were arrested in Belarus in recent months for allegedly smuggling 1.5 kilograms of uranium dioxide 235 and 238 in Belarus at the beginning of the 2002, reportedly originating at Chernobyl.

Belorussian KGB officials conducted a sting operation where they offered US$10,000 to purchase one rod, claiming they wanted to check its quality (10). The black market value of the 1.5 kilograms would have been US$250,000 - 800,000 (11).

One of the men, identified only by his surname, Veselovsky, worked at the Chernobyl plant as chief foreman in the reactor shop where radioactive elements were processed since 1987. The other four men, all Belorussians, did not work at the plant.

Serial numbers were removed from 5 rods, making it nearly impossible to determine their origin. The Belorussian KGB believes there are strong indications linking the theft to

Chernobyl – because of Veselovsky's access to the rods at Chernobyl, and that the rods came from a RMBK reactor, such as the ones at Chernobyl (12).

In 1993 zirconium tubes with 7.6 kilograms of low enriched uranium dioxide were also stolen, allegedly from Chernobyl, ending up in Belarus in 2002. Ironically, Veselovsky was a key witness in that case (13).

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3. *EBRD, Chernobyl Shelter Fund Publication, February 2000. (www.ebrd.com/enviro/nuclear/cfs/plan.pdf)*
4. Ibid. (see also *WISE News Communique* 547.5263, "Chernobyl: The shelter implementation plan".)
5. Uranium Information Centre, Briefing Paper # 63, March 2001 (www.uic.com.au/nip63.htm)
6. *The Washington Post*, January 2, 2003
7. The Guardian, 12 January 2003
8. Ibid.
9. EBRD, February 2000 (see note 3)
10 *Pravda*, 28 September 2002
11 www.bellona.org, 3 October 2002.
12. www.nti.org/db/nistraff/2002/20020600.htm
13. *Pravda*, 28 September 2002

Source and contact: NIRS/WISE Ukraine

BOOK REVIEW

Asleep at the Geiger Counter by Sidney Goodman, P.E., M.S.M.M.E., Blue Dolphin Press, Nevada City, CA, 2002, 255 pages, $16.95 (US).

Sidney Goodman tells it like it is. He states the case against nuclear power, weapons and dangerous waste schemes using a lifetime of wisdom, with no holds barred. A professional engineer with over four decades of experience researching and developing products for aerospace, commercial, industrial, residential energy and consumer goods, he provides a vivid, conversational overview of the nuclear age. Clearly knowledgeable on many aspects of nuclear power and weapons, he hits us with a vast array of facts and stories tied together as part of a living history, up to and including the current threats of new nuclear power reactors, increased use of depleted uranium in wars fought for fossil fuels when efficiency and renewable energy could avert the need for those resources, food irradiation, "recycling" of radioactive wastes into consumer goods, and continuing and increasing government subsidies to what would otherwise be an untenable industry.

He weaves politics, science and history to support his perspectives. Such issues as the real reason the decision was made to drop nuclear bombs on Hiroshima and Nagasaki and the weaknesses in the health effects studies that followed are addressed. There is a chapter devoted to whistleblowers and scientists with backbone who stood and stand up to the pro-nuclear establishment. Goodman points out the genesis and the flaws in some of the nuclear industry's most irritating lies. Using simple math and common sense he explains how little net energy is actually generated per ton of uranium, how much more radiation is released in the production of nuclear energy than coal, that reliance on nuclear energy does not make the US energy independent, that people and animals suffer and die as a result of nuclear power (including at Three Mile Island), that nuclear transport is dangerous, that the risks from accidents and terrorism are much worse than projected, and much more. A dedicated activist, Goodman provides recommendations for policy changes and action. Readers new to the issue will get the picture clearly and those already engaged in work for safe energy will probably find attention to their efforts at some point in the book.

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IN BRIEF

Pasko released. Russian journalist and environmental whistleblower Grigory Pasko was finally sat a parole hearing in Ussuriysk, Far Eastern Russia, on 23 January. Pasko had been convicted of treason in December 2001 and sentenced to 4 years' hard labor, after passing videotapes to the Japanese media showing illegal dumping of nuclear waste in the Sea of Japan by the Russian Pacific Fleet. Pasko will now work as editor-in-chief of Bellona Foundation's Russian language magazine Ecology and Rights.

He is still appealing his case to the Russian Supreme Court. Vladimir Slivyak from WISE Russia said, "We can just hope that with the Pasko case, FSB [secret service] attacks on anti-nuclear activists will be ended forever".

For more details on the Pasko case, see *WISE/NIRS Nuclear Monitor* 560.5363, "Amnesty adopts Pasko".

www.bellona.org, 23 and 27 January 2003; e-mail from WISE Russia, 24 January 2003

Nevada files Yucca brief. On 27 January 2003, the State of Nevada filed a 75-page brief in the U.S. Court of Appeals in Washington, D.C. in a lawsuit against the U.S. Nuclear Regulatory Commission (NRC). The lawsuit is one of five filed by the state in its attempt to stop Yucca Mountain becoming the nation's high-level nuclear waste dump. It includes elements of the four other lawsuits: three against the Energy Department, Energy Secretary Spencer Abraham and President Bush, plus one challenging the Environmental Protection Agency's radiation standards at the site. The state has already filed a separate constitutional challenge, arguing that the federal government cannot force one state to accept nuclear waste from 31 other states.

***Las Vegas Sun*, 28 January 2003**

Sellafield fatality. A worker fell to his death inside the No.1 Windscale Pile reactor chimney on 9 January 2003. He was part of a team of contractors set up to decontaminate the chimney through which a plume

of radioactive material was dispersed in the infamous Windscale Fire in 1957. He had been become separated from his safety harness whilst lowering metal joists and fell over 100 meters. His body had to be decontaminated before staff dressed in full protective clothing could remove it from the chimney.
***CORE Briefing*, 16 January 2003**

More corrosion. Boric acid corrosion similar to that discovered at Davis-Besse but on a smaller scale has been discovered at two more U.S. reactors, Sequoyah-2 in Tennessee and Comanche Peak-1 in Texas. The corrosion at Sequoyah-2 was about a third of a centimeter deep, while that at Comanche Peak-1 was said to be too small to measure. These two new discoveries come on top of the similar 1971 incident described in *WISE/NIRS Nuclear Monitor* 581.5477, "Swiss incident shows Davis-Besse hole is not unique".
***Toledo Blade*, 22 January 2003**

European Commission adopts "nuclear package". The European Commission adopted proposals on 30 January 2003 for two directives on nuclear issues – the so-called "nuclear package" (see *WISE/NIRS Nuclear Monitor* 574.5442, "Euratom and the EU 'nuclear package' "). One directive calls for a common "approach" to the safety of nuclear power plants, and the other concerns nuclear waste.

The most controversial problem is the deadlines for constructing nuclear waste dumps – 2018 for high-level waste and 2013 for low-activity and short-lived waste – which some countries will find impossible to meet.

However, Derek Taylor, head of the European Commission's nuclear energy, waste management and transport unit, has a novel "boondoggle" solution for countries facing public opposition to nuclear waste dumps: although the countries must build the dumps, "nothing [in the directive] says they've got to put [the nuclear waste] in the ground".
European Commission press release, 30 January 2003; *Nucleonics Week*, 16 January 2003

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WISE/NIRS NUCLEAR MONITOR

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

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