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U.S. ELECTRICITY CRISIS: UNFORTUNATE BUT ENTIRELY PREDICTABLE

The electricity crisis, that hit the Northeast of the U.S. on Thursday 14 August, has shown one of the negative consequences of electricity market deregulation. Less attractive investments (i.e. no short term profits) in the electricity grid had made it very vulnerable to failures such as happened on 14 August. About 50 million people in eight U.S. states and Canada were affected. Due to the outage 9 NPPs in the U.S. and 13 NPPs in Canada and more than 10 conventional power stations were shut down.

(591.5532) WISE Amsterdam – The blackout appears to have started in three transmission lines near Cleveland (Ohio). At 3.06 p.m. a trip at one transmission line caused extra power coursing at another line, which got overheated and tripped as well. Another line got disconnected in a switching station due to overload. As a consequence of overloads, several lines and switching stations started to trip and disconnect. Power stations disconnected themselves automatically from the grid to protect themselves from damage.

The Davis-Besse NPP was the first nuclear plant to be hit by the failure. Although it is out of operation, its power supply stopped at 4.11 p.m. Until 4.25 p.m. nine other reactors shut down automatically after losing power supply: Indian Point-2/3 (NY), Perry (OH), Fermi (MI), Ginna (NY), FitzPatrick (NY), Oyster Creek (NJ) and Nine Mile Point-1/2 (NY) (1).

In Canada, 13 NPPs shut down after the blackout. Pickering "B"-5/8, Bruce "B"-5/8 and Darlington-1/4 were in full operation. Pickering "A"-4 was at 15% power when it was shut down after the blackout. This unit was out of operation since 1997 (due to safety concerns) but now in the process of restarting (2).

Due to the crisis, computers stopped working, people got stuck in subways, trains could not drive, airports were closed as passenger's security checks could not be carried out, people had to sleep on the street as they were not able to get home, etc. An official state of emergency was declared in New York city and the Canada province of Ontario. Although some thought that sabotage by terrorists might have caused the failure, this possible cause appears to be not realistic. New York city was also hit by outages in 1965 and 1977. In 1965, 30 million people in New York and New England had been affected. In 1977, New York had no electricity for several hours (3).

Nuclear

Within 15 minutes, nine nuclear reactors in the U.S. were shut down automatically when power supply was disrupted. They had to rely on emergency backup diesel generators to supply the necessary power for cooling the reactor. According to Public Citizens' Critical Mass Energy and Environment Program (CMEP), sudden reliance on backup diesel generators is less than reassuring as there have been 15 instances in the past 12 months in which emergency generators either malfuntioned or failed to operate. At the Fermi reactor, all four of its backup generators were found to be

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inoperable on 1 February. Without emergency backup cooling, the reactor core could melt between two and eight hours.

If the current blackout would have caused a meltdown due to failing backup generators, it will have been likely that emergency sirens to alert proper officials and the public would not have operated due to the lack of power. Indeed, the Indian Point and Ginna NPPs informed the U.S. Nuclear Regulatory Commission that some of their emergency sirens would have rendered impotent due to the blackout. Leaving the public in a tragic state of ignorance in he event of a meltdown (4).

The blackout possibly also caused damage to some of the nine affected NPPs in the U.S. As of 18 August, five of the NPPs had been restarted and operating and a sixth was in the process of restart. Restart of Indian Point-3 was delayed as repairs were needed on electrical cables in the control rod mechanism. Owner Entergy said that they were not certain whether the grid failure had caused the damage. Perry NPP could not restart until repairs are made on a reactor core isolation system, which was already planned but now necessary since the shut down. Fermi-2 was back to 24% power at 20 August, after damage was repaired at turbine equipment, pumps and circuit boards. Fermi owner Detroit Edison said that the components got damaged when they were overheated in the sudden power loss (5).

In the U.S., Senate Republicans have called for greater reliance on nuclear energy and increase of production capacity. Although the problem was mainly caused by a transmission problem, not a capacity problem, Republicans are using the current crisis to promote nuclear energy.

They already rejected addressing the core issue – power grid and rules – in a separate legislation and rather use the crisis as "proof" that the U.S. needs a comprehensive Energy Bill, including large investments in nuclear (see elsewhere in this issue on Energy Bill developments) (6).

Only four of the Canadian reactors, three at Bruce "B" and one at Darlington, were able to restart immediately after the blackout. As of 21 August, the other eight were also expected to operate at full power. The failure to restart the eight reactors immediately after the blackout contributed to a power crisis in the Ontario province that shut down much of the industrial production (7).

Ontario is heavily dependent on nuclear energy. The three Ontario Power Generation (OPG) nuclear stations produce about 45% of the province's electricity (8).

Deregulation

Many see the current crisis as a negative consequence of the deregulation on the electricity market. According to Public Citizens' Critical Mass Energy and Environment Program, "there was plenty of power available at the time of the blackout, but something or someone overloaded the wires to move it to markets".

Deregulation even promotes such overloads because of the principles of selling as much as possible (to make profits). Necessary repairs or additions to the transmission system are however discouraged as these measures diminish profits (9).

According to former U.S. Secretary of Energy Bill Richardson, the U.S. would be "a superpower with a network of a Third World country". The Electricity Power and Research Institute (EPRI) concluded that electricity consumption has increased with 30% in the last 10 years, but the capacity of the grid in the same time only increased with 15% (10).

Even the U.S. Department of Energy (DOE) concluded in 2002 in the *National Transmission Grid Study* that the "outdated transmission system was not designed to support today's regional, competitive electricity markets. Investments in the transmission system has not kept pace with the growth in generation and the increasing demand for electricity. Transmission bottlenecks reliability and cost consumers hundreds of millions of dollars each year."

The present grid was built up over the last 100 years, mainly intended for local electricity distribution. Small interconnections between utilities existed, but were created to share excess generation.

Over the past 10 years, competition into wholesale electricity markets has been introduced and as a result the grid has become to function as a kind of interstate highway system for

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Editorial team: Robert Jan van den Berg (WISE Amsterdam), Michael Mariotte (NIRS). With **contributions** from Korean Dereation for Environmental Movement and WISE/NIRS Ukraine.

The next issue (592) will be mailed out 5 September 2003.

Due to circumstances we have **no "25 Years Ago"** in this issue. We will certainly write one for our next issue!

Oops! In issue 589 ("25 years ago") we wrote that a referendum on nuclear energy in Austria took place on 9 November 1978. This must be 5 November 1978. The "few" research reactors mentioned in the article are one 10 MW reactor at the Austrian Nuclear Research Centre at Seibersdorf (presently shut down) and two 1 MW reactors at universities. The 1997 "anti-nuclear package" was in content different from the later adopted "Constitutional Law for a Nuclear-Free Austria" of 1999. The scope of the former was much larger than the eventually adopted Law. **Information from PLAGE, 19 August 2003**.

wholesale electricity commerce. According to DOE, the grid has now become congested and needs urgent modernization.

The DOE study group recommended the establishment of Regional Transmission Organizations being responsible for grid reliability and federal legislation to make reliability standards mandatory (11).

Decentralization

The system of centralized electricity production in large power plants makes it vulnerable to failures such as happened on 14 August. Sierra Club of Canada thinks that nuclear energy has made the system prone to large blackouts: "Any electricity grid fed by large centralized nuclear and coal plants will always be vulnerable to large-scale blackouts. Long shutdown and restart times for nuclear plants have made the crisis much worse, and will be the direct cause of any rolling blackouts that take place".

According to the Sierra Club, increased energy efficiency and decentralized green energy sources can make the system more resilient, flexible and sustainable. But the exorbitant costs for nuclear rehabilitation have drained investments from the upkeep of the grid and forestalled green electricity (12).

Calling the blackout a "wake-up call to decision makers", the U.S. Rocky Mountain Institute (RMI) said that the U.S. should look to distributed, diverse and clean technologies to prevent problems in the future. RMI, described as a leading energy think tank, considers the present system of centralized electricity production as vulnerable to cascading series of errors.

Already in the 1982 book *Brittle Power: Energy Strategy for national Security*, RMI founders described the electrical grid as a disaster waiting to happen with catastrophic consequences. The current grid consists of relatively few and large units of generation and transmission interconnected rather sparsely with heavy dependence on a few critical nodes, many of which are nearly overload.

Although traditional responses often plea for more and larger power plants and extensive expansions of the power grid, RMI's response is a more distributed generation architecture: placing smaller, modular, diverse, and redundant electrical devices spread across the grid close to the load they serve.

Sources as fuel cells, combined heat and power (CHP), solar panels and micro-turbines can provide power at lower cost and greater reliability that the centralized power system (with large nuclear plants) (13).

Ohio utility FirstEnergy, where the blackout possibly started, was a large financial contributor to Bush's re-election campaign in 2000

In the 2002 publication *Small is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size*, RMI describes the potentials of a diverse and small energy system (14).

The 2002 *National Transmission Grid Study* of DOE draw a similar conclusion to distributed production: siting generation closer to areas where electricity is needed, and reducing electricity use through targeted energy efficiency and distributed generation (15).

Blackout investigation

DOE has announced an investigation into the causes and solutions of the blackout. Public Citizens' Critical Mass Energy and Environment Program doubts the independence of such an investigation team. The Bush Administration has close ties to the energy industry and Public Citizen is afraid that DOE will protect the very utilities that ought to be investigated.

One of the examples mentioned: Ohio utility FirstEnergy, where the blackout possibly started, was a large financial contributor to Bush's re-election campaign in 2000.

Public Citizen proposes to establish an independent task force, including public utility commissioners from effected states, consumer organizations, independent utility experts and representatives of the Federal Energy Regulatory Commission (16).

References:

(1) StarNewsOnline, 16 August 2003
(2) Sierra Club of Canada backgrounder, 14 August 2003
(3) NOS nieuws (NL), 15 August 2003
(4) CMEP press release, 15 August 2003
(5) *Nucleonics Week*, 21 August 2003
(6) Climate Action Network Europe email list, 19 August 2003
(7) *Nucleonics Week*, 21 August 2003
(8) Sierra Club of Canada press release, 19 August 2003
(9) CMEP press release, 15 August 2003
(10) NOS nieuws (NL), 15 August 2003
(11) Reports at: tis.eh.doe.gov/ntgs/reports.html
(12) Sierra Club of Canada press release, 19 August 2003
(13) Rocky Mountain Institute press release, 14 August 2003
(14) www.smallisprofitable.org
(15) Reports at: tis.eh.doe.gov/ntgs/reports.html
(16) CMEP press release, 20 August 2003

Contact: WISE Amsterdam

U.S. SENATE PASSES PRO-NUCLEAR ENERGY BILL

In a surprising development, the Senate passed an energy bill late 31 July by a vote of 84-14, at the end of a day that began with the likelihood that Senate Democrats were going to stop the proposed S. 14 Energy Bill (Domenici, R-NM) and send it back to the Energy Committee. The bill that now passed replaces S. 14, the bill the Senate had been debating, and is identical to that passed by the Senate in 2002, but which never got through a Senate-House conference committee and thus never became law.

(591.5533) NIRS - Among the now adopted bill's provisions are reauthorization of the Price-Anderson Act (nuclear liability), support for reprocessing of nuclear waste, and creation of the *Nuclear Power 2010* program, which seeks deployment of new nuclear reactors by 2010. The bill does not, however, include the multi-billion dollar loan guarantees for new reactors contained in S. 14, nor funding for President Bush's hydrogen initiative, which would have included US$1 billion or more for construction of a hydrogen production reactor in Idaho.

However, Senate Energy Committee Chairman Pete Domenici said he intends to rewrite the bill in the Senate-House conference committee to be more like S. 14. Said Domenici, "The reason I'm happy is because I'll be rewriting that bill. We're in the majority and we'll write a completely different bill." Domenici specifically said the bill will be rewritten to include more incentives for nuclear power, but it is unlikely that he can include the exact provisions that were contained in S. 14 because they are in neither the House nor Senate bills as passed.

Instead, Domenici is more likely to try to piggyback new nuclear funding on top of the Nuclear Power 2010 program. There are a number of differences between the House and Senate bills; most prominent perhaps is the House inclusion of a provision allowing oil drilling in Alaska's Arctic National Wildlife Refuge (ANWR), a provision that has sparked successful Senate filibusters in the past.

Gaining new attention because of the Northeast electricity blackout are provisions related to repeal of the Public Utility Holding Company Act (PUCHA) and transmission access. The fallout from the blackout makes it more likely Congress will pass an energy bill: Congress won't want to be seen as doing nothing on energy—even if the bill provides the wrong answers to the lessons learned.

Domenici and House Energy and Commerce Committee Chairman Billy Tauzin (R-LA) have promised to speed the bill through the conference committee as soon as they can. Substantive work in the conference is expected to start as soon as Congress returns to Washington after Labor Day (8 September). Both the full House and Senate must then take another vote to either accept or reject the version that comes out of the conference committee.

Check NIRS' website (www.nirs.org) regularly for updates on energy bill activities and what you can do to help.

Source and contact: NIRS

LES SWITCHING TO NEW MEXICO?

Louisiana Energy Services (LES), the uranium enrichment consortium led by Urenco, appears to have bowed to intense public opposition to its plans to build a new plant in Tennessee and now is taking aim at eastern New Mexico.

(591.5534) NIRS - In recent weeks, LES has been examining the area around Eunice, New Mexico, near the Texas border as a possible site for a uranium enrichment plant. The company already has sent a delegation of officials from Eunice and Lea County to the Netherlands to visit Urenco's plant in Almelo—something LES did when it was first courting Trousdale County, Tennessee officials.

Most of the Tennessee officials initially supported the LES project, but backed off when LES made contradictory and wrong statements about radioactive releases from the proposed plant and about radioactive waste storage. Trousdale County eventually established a demand that no more than 90 days worth of radioactive waste could be stored on the site at any one time—a demand LES cannot meet, since there is no facility that will accept its high volume of long-lived radioactive and toxic waste (see also *WISE/NIRS Nuclear Monitor* 586.5511: "LES stumbling in Tennessee").

While LES has not officially abandoned the Tennessee site, near Hartsville, it has said that project is "on hold" while it examines the New Mexico site. One problem with the New Mexico site is a lack of water. There are no rivers or lakes nearby, and the region gets its water primarily from the Oglalla aquifer. Taking from and discharging water to the aquifer would bring up serious water quality concerns, since long-lived uranium isotopes would be discharged by the plant.

So far, local New Mexico authorities have responded positively to LES' interest. The site is a stone's throw from Waste Control Specialists' radioactive/hazardous waste dump in Andrews County, Texas (see *WISE/NIRS Nuclear Monitor* 589.5525: "U.S.: Texas gives go-ahead for two waste dumps") and is not far from the WIPP waste dump near Carlsbad, New Mexico.

For its part, LES appears to have learned at least one lesson from its Tennessee experience. LES president Jim Ferland told the *Hobbs (NM) News-Sun* that "We, LES and the LES management, were not open and honest with the people in Tennessee. We did not always answer their questions in an open fashion. And I would say that sometimes we gave them incorrect information ….Louisiana Energy Services has lost its credibility in Tennessee, and for good reason."

New Mexico Senator Pete Domenici, chairman of the Senate Energy Committee, has encouraged LES to locate in New Mexico, but the position of the state's governor, former Energy Secretary Bill Richardson, is not yet known. Meanwhile, Tennessee residents have not yet broken out the champagne, but LES' current woes are testament to the dedicated work of local groups Citizens for Smart Choices and the Tennessee Environmental Council, both of which remained steadfast in their determination to keep LES out of their state.

Source and contact: NIRS

MASSIVE ACTIONS AGAINST PROPOSED SOUTH KOREAN WASTE DUMP

The Korean government's attempt to settle the nuclear waste dump site dispute faces strong opposition from local residents. In the *WISE/NIRS Nuclear Monitor* we have paid attention to the developments in 2003 (583.5492: "Nuclear waste dumpsite issues in South Korea" and 585.5504: "Struggle against waste storage sites"). Of four potential sites, announced in February, Wido (Buan County) in the Jeola Province, now seems to be the final candidate. Protest continued and increased during the last two months.

(591.5535) KFEM - The Korean government's 17 year search for a nuclear dump site has finally reached a conclusion and Buan residents are forced to carry the cross. After only three weeks of geological investigation, the government decided to construct the low-, medium- and high-level nuclear waste disposal facility (1) in the Wido islet, off the coast of Buan County, North Jeola Province. However, the government is now faced with the fierce opposition of a large number of local residents.

On 4 February, the government selected four potential sites but encountering fierce resident objection, decided to change the selection process. The choice was now up to local governments, bidding to host the nuclear dump site, starting on 1 July.

The Roh administration, which came to power with President Roh's image of youth and reformation, stressed the value of "peoples' participation", and entrusted authority to the leaders of autonomous local governments. However, it did not go well, as bribery and secret agreements pervaded behind the doors and the Governor of Buan changed his mind overnight, announcing, out of the blue, that he would bid for the site.

Following this was the government's investigation into the suitability of Buan for the radioactive waste treatment plant. It took ten days to investigate and surprisingly, the government ignored the obvious geological facts, such as the underwater fault lines, which potentially endanger the stability of the facility. The central government settled on Buan, the one and only candidate.

The people of the North Jeola Province have historically thought of themselves as excluded from central development plans and this nuclear dump site must have seemed to be a good chance to pay off their debts with the cash compensation the government was promising to provide.

The MOCIE (Ministry of Commerce, Industry and Energy) and KHNP (Korea Hydro and Nuclear Power Company) and several North Jeola university professors started to persuade Governor Kim of Buan to okay the plan until 1:00 a.m. on 11 July. Governor Kim has been openly opposed to hosting a nuclear dumpsite in his hometown, and rejected excavation for the suitability test twice in the past. On the same day, the Buan County Committee was going to hold a meeting for the bidding, but governor Kim held a quick press conference before the committee meeting, declaring that he had decided host the site.

After the press conference, the committee rejeced the hosting of the nuclear dumpsite 7 to 5. The governor's arbitrary decision to host the site instantly raised the rage of Buan residents and they started to

stage demonstrations from then on, the arduous struggle against the danger, and undemocratic conduct of the government imposed on them took off. About 6,000 police from all over the country were sent to repress unarmed protesters. 150 residents so far were injured during the protests in Buan.

Nevertheless, on 24 July, the government confirmed that Wido, Buan County will be the site.

Wido is a small island with a population of 1,400, adjacent to Young Gwang nuclear power plant to the south, and Saemangeum reclamation to the North. Wido's fishing grounds are destroyed because of these and the residents are heavily in debt. Using this situation as bait, KHNP falsely diffused talks of US$ 250,000 to 423,000 compensation, which would enable residents pay off their debts. This is how the government got consent from 90% of Wido residents. After Wido residents realized that they were not going to receive a cash compensation, they formed an opposition committee.

Governor Kim's face is on the wanted posters in Buan, primary and secondary students are refusing to go to school, and local shopkeepers are closing down their shops to protest. Fishermen blocked the seaway to Wido with their 250 fishing boats, and 10,000 people seized the high-way. 1,500 motor vehicles paralyzed traffic in JeonJu, the local capital of the North Jeola Province, in a protest against the provincial governor.

The locals, including various groups of people from the left- wingers to the right, and the young and old, are voluntarily gathering together to oppose to the government's decision. The candlelight protest has become a daily ritual to more than 10,000 residents of Buan (a county with 70,000 population). They have been going on for 20 nights and the vigils do not seem to have weakened a bit. Even the residents seemed to be surprised at their own power and with a positive and encouraged attitude, the resident's anti-nuclear movement is actively growing.

The government and nuclear industry are falsely claiming that plutonium is safe enough to eat, that spent fuel is a renewable resource — not a high-level nuclear waste, that the rest of the world is successfully operating nuclear waste disposal facilities, that those developed nations are continuing to construct nuclear power plants, without more nuclear power plants, electricity will run out by 2008, and that the storage for low- and medium-level radioactive waste will be desperately in need in 2008.

Buan residents are developing their local based protest against this particular nuclear waste disposal facility to the national movement for the government's abandonment of the nuclear centered energy policy.

Note:
(1) Low and medium level waste storage facility which will hold 800,000 barrels in total (at the initial stage it will hold 100,000 barrels) to be completed in 2008, and a high level nuclear waste storage facility which will hold 20,000 tons in total (at the initial stage it will hold 2,000 tons) to be completed in 2016.

Source and contact: Yangi Wonyoung at Korean Federation for Environmental Movement, 251 Nuha-Dong, Chongno-gu, Seoul, South Korea
Tel: +82 2 735 7000
Fax: +82 2 730 1240
Email: kimyj@kfem.or.kr
Web: antinuke.kfem.or.kr

U.S.: CRITICISM OF NPP FISH KILLS

While the Nuclear Energy Institute, the industry lobby group, continues to tout nuclear power as environmental friendly, the once-through cooling system used by the majority of U.S. NPPs has again come under increased criticism by two different state authorities.

(591.5536) NIRS - Both the New York State Department of Environmental Conservation and the California Regional Water Quality Control Board Central Coastal Region criticized the use of coastal and river water to cool nuclear power stations. State authorities concluded that the routine operation of nuclear power stations is killing billions of fish and destroying marine and aquatic habitats by sucking in tremendous amounts of water each day and spewing it out as hot water.

Nuclear power stations like Entergy's Indian Point on the Hudson River in New York and Pacific Gas & Electric's Diablo Canyon on the central coast of California take in over 2.5 billion gallons (9.5 million cubic meters) of water each day per site in order to quench the generated steam used to spin turbines for electricity production.

In a once-through cooling system, river water is used to quench the steam in the turbine circuit and afterwards released directly into the river again. The alternative to once-through cooling is the use of cooling towers. The water circulating in a cooling tower is being quenched by outside air, requiring less river water and resulting in less releases of hot water. However, large cooling towers increase the visual impact of an NPP and "spoil" the nuclear industry's wish to be "emission-free".

A study performed by the New York Department of Environmental Conservation and publicly released on 11 July 2003 looked not only at Entergy's two reactors at Indian Point, representing the Hudson River's number one largest thermal polluter, but also the river's sixth and the seventh largest fossil fueled units using once-through cooling systems.

The electrical power facilities combined take in 1.69 trillion gallons (6.4 billion cubic meters) of water annually, more than three times the water used each year by New York City's 9 million residents and two neighboring counties.

The study found that the greatest harm came from billions of fish and larvae being sucked in (entrained) into the station cooling condensers and killed upon discharge to the river with the heated water (up to 35° Fahrenheit (19° Celsius) hotter than the intake water temperature).

The state study further concluded that there was greater harm from the heated water being discharged back into the Hudson's tidal estuary than previously assumed. The three electrical generating facilities' combined thermal discharge, 220 trillion BTUs per year (232 million GigaJoules), is the equivalent amount of heat generated by the detonation of a Hiroshima-size nuclear bomb approximately every two hours (1).

As a result entire species of fish and vegetation are disappearing from larger reaches of the river, victims of the hot water discharge.

On 10 July 2003, the California Regional Water Quality Control Board for the Central Coast regarded the same destruction to the coastal marine environment of Diablo Cove from the two 1000 MW units of the Diablo Canyon nuclear station.

The coastal water commission withdrew its support from an earlier proposed settlement which would have required PG&E to conserve 2000 acres of land north of the reactor and pay out US$4 million toward marine restoration projects, including abalone breeding and repopulation of coastal waters.

In the end, the water board rejected the proposal after environmental groups, including Earth Corp, Mothers For Peace, and NIRS, along with a state team of marine biologists criticized that the settlement would not offset the ongoing marine damage from the continued operation of the cooling system. The coastline thermal impact zone was found to be larger than predicted. Field's Cove, intended as a coastline control zone for studying the station's discharge impact on Diablo Cove, is periodically thermally polluted by the reactors nearly two miles away.

The actual discharge impacts include major reductions of fish species and habitat, including the almost complete loss of some marine species and major increases of "bare rock" in Diablo Cove.

The state authority and PG&E now must go back to the drawing board for a solution which could include a state issued Cease and Desist Order on the operation of Diablo Canyon.

In both cases, under the Clean Water Act, state authorities could order the nuclear power stations to cease using river and coastal water as their primary source to cool the reactors and switch to cooling towers. Such enforcement is highly unlikely without the presence of significantly more public pressure.

While cooling towers use an order of magnitude less water resources (30 million gallons per day) nuclear power companies vehemently argue that their construction and reduced cooling efficiency is economically prohibitive.

Such financially-driven opposition through "cost/benefit analyses" has repeatedly blocked environmental efforts to upgrade stations that rely upon the wasteful and harmful system.

However, the growing destruction of the marine and aquatic environment is potentially irreversible if the operation of once-through cooling is allowed to continue unchecked. More reason to call for the abolition of nuclear power, altogether.

In February 2001, NIRS and the Safe

EUROPE

In several countries in Europe, temperatures during the first weeks of August reached exceptional historical levels. In a long lasting period, temperatures were between 30 and 40 degrees Celsius (85-105 degrees Fahrenheit). As a consequence, river water temperatures increased and in combination with little rainfall the effect was even worse. Several countries decided to restrict releases of cooling water from power stations to prevent extreme environmental damage (fish killing), but exceptions were soon made for NPPs.

As a consequence, several NPPs in Germany, France, Belgium and Switzerland faced problems and would have to reduce power output significantly. Nevertheless, France's environment minister relaxed the cooling outlet temperature of 7 sites (24 reactors) until the end of September to allow continued operation. The allowed temperatures of cooling water is one degree higher for most of these reactors, but three degrees for the reactors at Tricastin and three other sites. The four reactors at Tricastin however are not necessary for public electricity production but is used as power supplier to the Eurodif uranium enrichment plant.

In Belgium, Doel NPP (4 reactors) got permission for discharges at 33 degrees Celsius and German NPPs have been allowed a two degrees increment. Switzerland temporarily reduced power output at its NPPs.

The exceptions for the French and German NPPs have caused criticism of environmental groups in both countries. They are afraid that the hot water discharges will cause significant damage to nature and environment.

***WNA Weekly Digest*, 15 August 2003; Press Agency ANP (NL), 12 August 2003**

Energy Communication Council published the report *Licensed to Kill: how the nuclear power industry destroys endangered marine wildlife and ocean habitat to save money* (see *WISE/NIRS Nuclear Monitor* 544.5252: "Cooling water systems kill marine wildlife"). The report describes the devastating consequences of hot water releases to marine wildlife (2).

Notes:
(1) This is a surprising amount of heat coming from electricity generating plants (primarily nuclear) just being dumped into the river, lake or ocean. The figure appears in the 11 July 2003 issue of the *Journal News* in an article authored by Roger Witherspoon. He extrapolated the Hiroshima equivalent (80 billion BTUs) from the original figure in the NY study— 220 trillion (!) BTUs/year for combined release from the Indian Point nuclear station and the fossil units at Roseton and Bowline, NY.
(2) The summary of Licensed to Kill and other related documents can be found at: www.nirs.org/licensedtokill/licensedtokillintropage.htm

Contact: Paul Gunter at NIRS (pgunter@nirs.org)

UKRAINE PROPOSES RESETTLEMENT IN CHERNOBYL ZONE

The Ukrainian cabinet of ministers has drafted a law that will permit up to 1,500 families to return to live in the so-called exclusion zone, or the region with a radius of 30 kilometers from the Chernobyl Nuclear Power Plant, which unit-4 exploded in 1986. Until now, the 30 kilometers zone has been so heavily contaminated that it was unsuitable to live. The Ukrainian Parliament will decide whether to pass the law when it reconvenes in September (1).

(591.5537) NIRS/WISE Ukraine - Previously, this area was completely off-limits to resettlement due to its high level of contamination of radioactive cesium-137 (and other radionuclides), stated to be above 40 Curies/km^2. Currently 450 – 600 people, mostly pensioners, are living in this region illegally, according to the United Nations.

Up to 4,600 people are still waiting to be resettled in Ukraine, of a total 350,400 people who were evacuated or resettled from 1986 to 2000 in Ukraine, Belarus, and Russia due to the disaster (2).

The proposed changes in the classification of the exclusion zone will allow the construction of roads and buildings to accommodate people wishing to move back to the area.

An Associated Press report cited unnamed experts who claim that the law is needed to normalize regions no longer contaminated by radiation and to spur economic development and investment in the zone (3).

However, it is not clear what type of development will occur, since farming and logging are both not considered safe or economically viable.

Only two months ago, in June, Chernobyl engineers admitted that the current covering of the damaged plant – known as the sarcophagus – is decreasing in stability. A new covering, the so-called Chernobyl Shield, is not to be completed until 2007. A collapse of the current sarcophagus could send radioactive dust throughout the exclusion zone, according to officials (4).

Sources:
(1) Reuters, 13 August 2003
(2) *The Human Consequences of the Chernobyl Nuclear Accident*, UNDP UNICEF, 25 January 2002
(3) Associated Press, 14 August 2003
(4) Associated Press, 20 June 2003

Contact: NIRS/WISE Ukraine

IN BRIEF

Two Russian anti-nuke activists arrested while protesting in Yekaterinburg. While protesting against the use of plutonium at Russian NPPs and the construction of a new reactor at the Beloyarsk plant, two climber-activists from the anti-nuclear group Ecodefence (WISE/NIRS Russia) were arrested on 15 August. About 40 environmentalists from the International Antinuclear Camp (held between 6 and 16 August) took part in the action. The action took place in the centre of Yekaterinburg, close to the election headquarters of the acting Sverdlovsk regional governor Rossel, who is in favour of the plutonium development. A group of activists unfurled a 100 square meters banner that read "No new reactors" on the building. Also a banner was unfolded near the entrance to the election headquaters saying "Stop Plutonium!". The new breeder reactor at Beloyarsk is scheduled for start-up in 2008. The plant is just 30 kilometers from Ekaterinburg city with 1,5 million people who every day risks to be contaminated with plutonium as a result of even relatively small accidents at the power plant, says Ecodefence.
Bellona Foundation, 16 August 2003; Ecodefence (announcement), 14 July 2003

Former U.S. nuke engineer finds fault with power increase Vermont Yankee reactor. Citing internal utility Entergy Nuclear documents, a former nuclear engineer said on 19 August that the 31-year old Vermont Yankee reactor is in no shape to boost its power output. Earlier this year Vermont Yankee asked for permission to boost its current power level output of about 510 MW to about 620 MW. The plant has been running since 1972 and its current license runs through 2012. Entergy officials have said they want to seek a license extension that would allow them to run the Vernon plant past that date. But Arnie Gundersen, a former nuclear engineer, stated at a news conference called by the anti-nuke New England Coaltion, that the plant will be lucky to get to the end of its current life at its current power level. He released copies of expert testimony he filed on 19 August with the Public Service Board. Gundersen said he has been able to obtain numerous examples of deteriorated components, only marginally reliable without uprate. Several of the documents are highly technical and concern the corrosion with age of individual plant components. One internal memo said "the planned power upgrade project under way at VY will require a complete review of program evaluations, piping modeling and procedures to account for changes in equipment and flow regimes in plant piping systems".
***The Providence Journal,* 19 August 2003**

Increased radioactive releases from shutdown Main Yankee reactor. Maine Yankee, first on-line in 1972, has been shut down permanently since 1996. In 1980 the State of Maine legally required the plant to report emissions of radioactive gas and liquid on a daily basis. Not a day has passed when it could report NO radioactive release to the environment. Now, while moving old irradiated fuel from the cooling pool to on-site dry storage casks, it has estimated a release of one half a curie (18,500,000,000 Becquerels) of radioactive gas every day for at least two months, "mostly Krypton-85" according to the state on-site inspector who says this may go on for a few weeks more. From 20 years of reporting it is known that one-half curie of radioactive gas is the average total amount released routinely each month when the reactor was functioning "normally". Like most others, the plant experienced damaged fuel. When at last it must be taken out of the irradiated fuel pool and moved to other storage it will inevitably continue to release more radioactivity. A "dead" nuclear plant can yet be deadly.
NIRS/Citizens' Monitoring Network, July 2003

Scottish Dounreay nuclear plant breached safety regulations. A judge at the Court of Session in Edinburgh has ruled that the operators of the Dounreay reprocessing breached safety regulations. Geoffrey Minter, who lives near the plant in Caithness, went to court after radioactive particles were found on a beach. By the time the case reached court in February the number of particles was 22 but it had jumped to 38 before the proceedings ended. The judge held that the UK Atomic Energy Authority (UKAEA), which operates the plant, had failed its duty under the Nuclear Installations Act 1965. This says the UKAEA must ensure that nuclear material causes no injury or damage to property. However according to the judge, the law does not allow her to order the detailed clean-up which Mr Minter had demanded in place of the current monitoring regime. He welcomed though the ruling and said he had been motivated to 'restore' the beach for his family and the public. He now is considering to seek.
BBC News, 15 August 2003

South African Chamber of Commerce wants to re-evaluate PBMR. The South African Cape Chamber of Commerce has called for a re-evaluation of the economics of Eskom's proposed PBMR at Koeberg. The chamber said that Eskom's planned reactor should be re-evaluated in view of changing economic circumstances since the discovery of a vast gas field off the West Coast. A new economic study by Forest Oil had found that a major gas turbine power station on the West Coast was economically viable and would have "far-reaching implications" for the economic development of the Western Cape. This came just days before the deadline on 25 July, for the public to appeal against the decision by the department of environmental affairs and tourism which has given the green light for the project from an environmental aspect.
***Cape Times,* 22 July 2003; *Mail and Guardian online,* 18 August 2003**

Contamination found on shipment of spent nuclear fuel. At the end of July a U.S. Nuclear Regulatory Commission (NRC) inspection detected nearly twice the amount of allowable radiation limits on a spent nuclear fuel rail shipment cask in North Carolina. The shipment came from Progress Energy's Robinson NPP and went to the company's Harris plant near Raleigh. According to Progress nothing had leaked from the container. It was not a breach, but instead was a cask that was not properly inspected or decontaminated before leaving South Carolina, a Progress spokesman stated. He furthermore noted that the NRC will conduct an investigation. The director of the Nevada Nuclear Waste Task Force, Judy Treichel, is concerned. Also, because of the fact that only a few details were made public on the incident. Watchdog Public Citizen and North Carolina Waste Awareness and Reduction Network sent a letter to the North Carolina Attorney General saying it is unacceptable for the NRC to withhold information from the public about surface contamination of a container.
***as Vegas Sun,* 11 August 2003**

No nuclear waste storage on Arctic Island Novaya Zemlya. Russia has decided not to construct a nuclear waste storage facility on the island of Novaya Zemlya in the Arctic Ocean. Nuclear Energy Minister Alexander Rumyantsev announced on 26 July that the Federal Nuclear and Radiation Safety Inspectorate had decided that the project should not go ahead. Scientists and geologists conducted an analysis of potential changes to the region's climate and came to the conclusion that rising temperatures over the next 150-200 years threatened to thaw the region's permafrost. This could lead to leaks of the radioactive materials. Rumyantsev said that the ministry is looking into building a storage facility in a remote part of the Kola Peninsula. The Nuclear Energy Ministry had approved the construction of a US$70 million waste storage facility on Novaya Zemlya in June 2002. The storage facility is needed to hold liquid radioactive waste from decommissioned nuclear submarines.
***Pravda*, 28 July 2003**

Tokyo Electric found leaks in Fukushima Daichi reactor. Tokyo Electric Power Co., Japan's largest power supplier, said it found leaks in a reactor in its Fukushima Daichi NPP when it conducted safety checks before seeking approval to restart the closed reactors. The reactor no. 2 at the Fukushima Daichi (BWR 784 MW) plant leaked coolants on 24 July. The reactor was shut for safety checks on 31 March. According to Tokyo Electric the leakage has been stopped. The company is looking at the cause of the leakage and ways to prevent such leaks in the future. The utility was forced to shut all its 17 reactors in Fukushima and Niigata prefectures for safety checks by 15 April after admitting last year its employees falsified plant safety documents for a decade. The company has since restarted four of the reactors after passing safety checks.
Bloomberg, 25 July 2003

Repair at US South Texas Project nuclear plant poses challenge. The tiny leaks that shut down the South Texas-1 reactor have been fixed, but plant officials have to prove they've fixed them for good. According to Jim Riccio, nuclear policy analyst with Greenpeace in Washington D.C., the vessel is not the same strength as it was before. "This is not a repair. It's a patch". However, according to the plant officials the leaks have been repaired to their satisfaction, but the plant's Unit 1 (PWR 1312 MW) remains closed until they convince federal regulators that it is safe to bring back on line.

The problem began when two tubes that contain instruments that monitor the reactor core were found to have small amounts of boric acid residue on them where they enter the reactor vessel. That indicated the radioactive cooling water that contains boric acid had leaked from the vessel through the wall of tubes. Tests revealed small vertical cracks in two of the tubes at the bottom of the vessel, where the trace amounts of boric acid were found. Never before such a leak had occurred on the bottom of a reactor vessel. The cracks were so small that they likely existed for as long as four years until they grew enough for water to seep through them.
***Houston Chronicle*, 19 July 2003**

No radiation risk in Indian Kalpakkam NPP? The Atomic Energy Regulatory Board (AERB) has denied any link between radiation release from the KAPS Kalpakkam plant (PHWR 170 MW, Madras) and the reported high incidence of "polydactyly", a condition in which children are born with extra fingers or toes. According to AERB secretary K.S. Parthasarathy radiation close to population from an NPP is too small to cause any health effect. The controversy arose following documented evidence of 12 cases of polydactyly in children living within a 16 kilometers radius from KAPS. In contrast, there were only two such children beyond this limit but in both cases their mothers had come from within the exclusion zone. A medical practitioner in Kancheepuram, who did the survey, told the Press Trust of India (PTI), that the affected children were all born after KAPS was set up. The oldest is 15 years and the youngest child with six fingers is 15 months.
PTI, 14 July 2003

U.S. Savannah River suspends waste tank closures following court decision. The plan to close tanks holding as much as 34 million gallons (128 million liters) of high-level nuclear waste at South Carolina's Savannah River site has been temporarily stopped following a federal court decision. The court overruled the U.S. Department of Energy's decision to reclassify some high-level nuclear waste in order to seal it in temporary storage tanks, such as those at Savannah River, and leave it. National legislation enacted in 1982 requires high-level waste to be buried in a deep geologic repository.

The National Resources Defense Council - a private, non-profit conservation organization - won the federal court ruling. The council said the energy department had violated the 1982 Nuclear Waste Policy Act. There are 51 tanks at Savannah River. Two of them were emptied except for about 3,000 gallons of residue, which was sealed inside with concrete. Operations to close any more tanks will stop until the ruling is reviewed by government lawyers. Some South Carolina officials, however, said the court ruling may give the state's citizens more voice in deciding whether high-level waste will remain in the state.
***Greenville News*, 16 July 2003**

Problems shut British Wylfa nuclear power plant. The owners of the Wylfa NPP (Magnox 670 MW), British Nuclear Fuels Limited, in Wales have shut down the plant

because of technical problems. A reactor was closed down after problems were detected during a routine maintenance check, which has to take place every two years. A decision was then taken to close the plant's other reactor. The latest problem is yet another blow to the future of the power station, which was openend in 1971. Full scale electricity production was re-started two years ago after safety concerns forced a 15-month shutdown.

The latest difficulties are said to be unrelated to the technical problems suffered in 2001. According to BNFL, reactor –1 has been shut down for its statutory overhaul. Each reactor is shut down every two years. Inspections inside the reactor vessel showed there were a few defects present in a small number of welds associated with brackets which support the boiler tubed in the reactor.

On 27 July there was another problem at the reactor. BNFL confirmed carbon dioxide gas, used as a coolant in the reactors, escaped from storage tanks. Inspite of a statement by BNFL which said that the gas was clean and not radioactive, spokesman Dylan Morgan of People against Wylfa B, said it was the latest in a worrying series of incidents at the station. According to Morgan the incident is indicative of an ageing station that is way past its orginal working life. Friends of the Earth Cymru said it calls again for the closure of the plant on safety grounds.

Only two years ago two people were treated for shock and workers ordered to evacuate the site after carbon dioxide gas was released in the basement of one of the reactor buildings. On 15 August a worker at the plant was airlifted to hospital after a steam pipe fractured. The contractor suffered injuries to the lower body from a boiler pipe burst. According to a spokesman for operator BNFL Magnox Generation the water was clean, not radioactive.
BBC News, 25 July 2003, *Daily Post*, 29 July 2003, *icNorthWales*, 15 August 2003

NIRS/WISE offices and relays

WISE Amsterdam
P.O. Box 59636
1040 LC Amsterdam
The Netherlands
Tel: +31 20 612 6368
Fax: +31 20 689 2179
Email: wiseamster@antenna.nl
Web: www.antenna.nl/wise

NIRS
1424 16th Street NW, #404
Washington, DC 20036
USA
Tel: +1 202 328 0002
Fax: +1 202 462 2183
Email: nirsnet@nirs.org
Web: www.nirs.org

NIRS Southeast
P.O. Box 7586
Asheville, NC 28802
USA
Tel: +1 828 675 1792
Email: nirs.se@mindspring.com

WISE Argentina
c/o Taller Ecologista
CC 441
2000 Rosario
Argentina
Email: wiseros@cyberia.net.ar
Web: www.taller.org.ar

WISE Czech Republic
c/o Jan Beranek
Chytalky 24
594 55 Dolni Loucky
Czech Republic
Tel: +420 604 207305
Email: wisebrno@ecn.cz

WISE Japan
P.O. Box 1
Konan Post Office
Hiroshima City 739-1491
Japan
Tel/Fax: +81 82 828 2603
Email: dogwood@muc.biglobe.ne.jp

WISE Russia
P.O. Box 1477
236000 Kaliningrad
Russia
Tel/fax: +7 0112 448443
Email: ecodefense@online.ru
Web: www.ecodefense.ru

WISE Slovakia
c/o SZOPK Sirius
Katarina Bartovicova
Godrova 3/b
811 06 Bratislava
Slovak Republic
Tel: +421 905 935353
Fax: 421 2 5542 4255
Email: wise@wise.sk
Web: www.wise.sk

WISE South Korea
c/o Eco-center
121-020 4F
GongDeok Building 385-64
GongDeok-dong Mapo-go
Seoul
South Korea
Tel: +82 2 718 0371
Fax: +82 2 718 0374
Email: ecenter@eco-center.org
Web: www.eco-center.org

WISE Spain
Appartado de Correos 741
43080 Tarragona
Spain
Email: jaume.morron@retemail.es
Web: www.ecologistasenaccion.org/otros/wise.htm

WISE Sweden
c/o FMKK
Barnängsgatan 23
116 41 Stockholm
Sweden
Tel: +46 8 84 1490
Fax: +46 8 84 5181
Email: info@folkkampanjen.se
Web: www.folkkampanjen.se

WISE Ukraine
c/o Ecoclub
P.B. #73
Rivne-33023
Ukraine
Tel/fax: +380 362 284 166
Email: akul@atominfo.org.ua
Web: www.atominfo.org.ua

WISE Uranium
Peter Diehl
Am Schwedenteich 4
01477 Arnsdorf
Germany
Tel: +49 35200 20737
Email: uranium@t-online.de
Web: www.antenna.nl/wise/uranium

WISE/NIRS NUCLEAR MONITOR

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WISE/NIRS NUCLEAR MONITOR
c/o WISE Amsterdam
PO Box 59636
1040 LC Amsterdam
Netherlands

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