NIRS

wise
World Information Service on Energy
founded in 1978

NUCLEAR MONITOR

A Publication of World Information Service on Energy (WISE) and the Nuclear Information & Resource Service (NIRS), incorporating the former WISE News Communique

#635-636 **October 14, 2005**

U.S. NRC STAFF URGE REJECTION OF DUBIOUS FIRE PROTECTION RULEMAKING

At a public meeting on September 30, 2005 the staff of the U.S. Nuclear Regulatory Commission (NRC) announced their recommendation to the Commission to drop a proposed rule making that would substitute controversial "manual actions" for federally required nuclear power station fire protection requirements on electrical cabling (physical fire barriers, minimal cable separation with automated detection and suppression) vital to shutting down the reactor in the event of a significant fire.

(635-636.5718) NIRS - Since 1992, NIRS has identified widespread nuclear industry violations where fire barrier systems, such as Thermo-Lag and more recently Hemyc fire barriers, have dramatically failed standardized industry fire tests and would likely fail to protect reactor safety systems in the event of a real fire.

Subsequently NRC declared the fire barriers "inoperable" for protecting electrical power circuits, control and instrumentation cabling used in the event of fire to remotely operate reactor shutdown. As a result, the majority of the U.S. nuclear power industry was found to be in violation of fire safety standards as prescribed under current Code of Federal Regulation. However, the federal agency failed to take effective enforcement action and require that operators become compliant with current fire protection law by installing qualified fire barriers or maintaining minimal separation requirements between electrical circuits for reactor safety-related equipment.

Under the proposed rule, the Commission would ignore long standing and ongoing fire code violations and requirements for operators to repair bogus fire protection systems and would instead change the law to alternatively approve operators plans to send employees on hundreds of heroic missions throughout reactor complexes – potentially affected by fire, smoke and high radiation fields – to manually shutdown reactors after fire had destroyed the now unprotected electrical circuits for automated shutdown and vital residual heat removal from the reactor.

The Commission had first announced its dubious plan for the rule change in July 2003 at which time NIRS had vigorously opposed it. The proposed rulemaking was in response to the NRC's discovery in 2000 of industry wide applications of manual actions that had not been analyzed or unapproved by the agency. In many cases, the manual actions were illegally substituted for fire safety licensing agreements

IN THIS ISSUE:

reached with the agency in safety meetings from 1992 to 1998 for 89 U.S. reactor units operating with fake fire barriers installed over electrical cable trays and conduits for redundant safety shutdown equipment running through the same fire zone. Additionally, in 1998 NRC had issued 17 Orders for 24 reactor units whose operators failed to produce timely resolution schedules for fire code violations. In all of these cases, a single fire could disable both primary and back-up safety equipment necessary to control the reactor in the event of a fire-related accident.

NIRS generated more than 400 public comments opposing the rulemaking and charged that the rule change abandoned the agency's own defense-in-depth philosophy, undermined the regulatory safety oversight and abandoned federal enforcement policy. The rule change further disregarded concerns raised over how the proposed manual actions might be affected during fires resulting from terrorist attacks and by sabotage. NIRS submitted extensive comments to NRC on May 23, 2005 that can be viewed at: http://www.nirs.org/reactorwatch/fire/fire05262005operatormanualactions.pdf

While the nuclear industry had sought to substitute fire barriers with unfettered operator manual actions over the costly repair of fire barrier and cable separation problems, the Nuclear Energy Institute (NEI) stubbornly opposed staff's inclusion of a section to the rule that would require designated time margins for licensees to complete manual actions before reactor core damage might occur. The 1975 Browns Ferry fire destroyed 1600 electrical cables routed through 117 cable trays and conduits including 600 circuits for safe shutdown narrowly averting disaster by "sheer luck." The fire graphically demonstrated that a major loss of reactor control and the ability to maintain cooling of the reactor can occur within fifteen minutes of initiation.

As a result of the lack of both public and industry support for the rule change, NRC staff has recommended that the Commission withdraw the proposed rule. The federal nuclear safety agency extended its enforcement discretion policy to the widespread violations that continue to leave public safety-related electrical cabling in nuclear power stations vulnerable to fire without an expiration date.
Given that these federal fire codes violations are still smoldering after 13 years and new discoveries of more inoperable fire barrier materials, the public should be increasingly alarmed by the NRC's Office of Enforcement extension of no enforcement actions. In the wake of Hurricane Katrina in August of 2005, no enforcement for failed fire barriers is not unlike quietly maintaining the low levees around New Orleans banking on the odds that a major hurricane will not make landfall on a weak link, which we now know was a monumentally tragic mistake and failure of federal, state and local authorities. The catastrophic consequences to public health and safety are unacceptable particularly given the extent of forewarning and stonewalling on this significant fire protection issue at nuclear power stations.

Source and contact: Paul Gunter, Reactor Watchdog Project at NIRS pgunter@nirs.org

AWARDS FOR NOBLE DEEDS

The Norwegian Nobel Institute in Oslo has played host to at least one worthwhile and prestigious award in the past weeks, that which honoured the recipients of the 2005 Nuclear Free Future Awards on September 24th.

(635.-636.5719) WISE Amsterdam – Five true champions of peace were recognised by the Franz Moll Foundation (in cooperation with Norske Leger mot Atomvåpen, IPPNW-Germany, Nei til Atomvåpen, and the Seventh Generation Fund, USA) for their substantial work and heroic efforts to stop the spread of the nuclear disease.

Motarilavoa Hilda Lini from Vanuatu, Preben Maegaard from Denmark, Joe Shirley Jr. & George Arthur from Navajo Indian Country and our very own Mathilde Halla from Austria were the five celebrated at this years ce-remony.

WISE Amsterdam congratulates all the NFFA recipients and pays special tribute to Mathilde Halla who was presented with the 2005 Nuclear-Free Future Lifetime Achievement Award.

Mathilde first became involved in the anti nuclear movement in 1973 when she joined a small activist organization in Austria called Burgerinitiative gegen Atomgefahr ('Citizens Against Atomic Danger') while working as a schoolteacher for mentally challenged children.

She began her campaigning life opposing the construction of the Zwentendorf nuclear power plant in Austria and by 1978, the demonstrations against the plant forced Chancellor Bruno Kreisky to announce a referendum on the

25 YEARS AGO

What happened 25 years ago? We go back to news from our 1980 WISE Bulletin*, comparing anti-nuclear news then and now.*

Then
In *WISE Bulletin* vol. 2 nr. 4 we wrote about the growing debts caused by nuclear power: "In most cases the foreign debts already amounted to many millions or even billions of dollars before the start of the nuclear power programme. The nuclear selling countries extend loans, but these also have to be paid back sometime."

Now
The Philippines is still buckling under the weight of the debts incurred for the Bataan nuclear plant. Former president, Ferdinand Marcos borrowed US$1.9 billion to cover the costs of constructing the plant and because of that, every day until 2018, the Philippines obligated to repay US$170.000 to the lenders. And that for a plant that has never produced electricity because it was built on a known earthquake fault. In April 2005, Supreme Court Associate Justice Reynato Puno advised the country's government to consider stopping payments for this loan because it was taken out by the notoriously corrupt government of Ferdinand Marcos. Puno argued that the creditors should not be repaid since they had knowingly given the loan to a corrupt military regime and therefore were in essence party to a crime.

The same issue is raised in other countries. In 2000 the Argentine Federal Court made a ruling about its own foreign debt deciding that a great portion of the debts were acquired by illegitimate military rulers and were not used for the benefit of the state and its people therefore the state should not be obliged to repay them. Argentina built two nuclear power plants (Atucha 1 and Atucha 2), of which one has never been finished because of the rising costs but still billions of US dollars, which were already spent, must be paid back. Another expensive scheme linked with the Atucha 2 reactor is the Arroyito Heavy Water Plant (PIAP). Even though construction costs for PIAP reached US$1.3 billion, it will not be possible to maintain without Atucha 2 and given that it is unlikely Atucha 2 will ever be completed, it is likely that more money will have to be spent to convert PIAP for other industries or the country risks losing the investment already made in the plant along with the US$1 billion already wasted on Atucha 2.

http://www.odiousdebts.org/odiousdebts/index.cfm?DSP=content&ContentID=12901
http://www.odiousdebts.org/odiousdebts/index.cfm?DSP=subcontent&AreaID=152

WISE/NIRS Nuclear Monitor on November 12, 2004

nuclear issue. Against all odd, 50.5% voted against nuclear power and Zwentendorf was mothballed. Mathilde then went on to campaign against Wackerdorf across the German border in the 1980s. Fierce anti nuclear resistance also brought about the closure of that plant.

In her capacity as chair of the OÖ Überparteiliche Plattform gegen Atomgefahr ('Upper Austrian Platform against Nuclear Danger') and after the Chernobyl catastrophe had demonstrated that radiation respected no borders, Mathilde led the organization in its continuing battle against the Temelin plant in the Czech Republic. As her previous record dictates, Temelin must also soon be added to the list of nuclear plants mothballed due to the power of people unafraid to stand against the seemingly overwhelming force of the nuclear lobby.

For over thirty years now, she has coordinated anti-nuclear demonstrations, blockades, and boycotts, edited, written and translated numerous newsletters, articles and brochures, published the book, "Worst Case Scenario Chernobyl", distributed petitions and information to schools and churches throughout Austria, Bavaria, and the Czech Republic and organized international symposiums.

We are proud to call Mathilde our friend and colleague and are delighted that her commitment and fortitude has been recognised with the 2005 Nuclear Free Future Lifetime Achievement Award. Mathilde, we salute you.

Sources: www.nuclear-free.com; Atomstopp International press release, September 21, 2005

Contact: Atomstopp International at post@atomstopp.at

WISE Amsterdam/NIRS

ISSN: 1570-4629

Editorial team**: Tinu Otoki (WISE Amsterdam), Michael Mariotte (NIRS). With** contributions **from Alice Hirt, Ken Bossong (Ukrainian-American Environmental Association), Laka Foundation and NIRS.**

The next issue **(637) will be mailed out on November 4, 2005.**

U.S. EPA PROPOSES CARCINOGENIC YUCCA REGULATIONS

The U.S. Environmental Protection Agency (EPA) has sunk to a new low with recently proposed revisions to its Yucca Mountain, Nevada high-level radioactive waste (HLRW) dump regulations.

(635-636.5720) NIRS - On July 9, 2004, the State of Nevada and a coalition of environmental organizations, including NIRS/WISE, won a major legal victory (see WISE/NIRS Nuclear Monitor 614.5631, "Yucca Decision: 'Still on Track' or 'Derailed'?" July 30, 2004). The U.S. Court of Appeals ruled that EPA must re-write portions of its 2001 Yucca regulations, because its cut off of regulations at 10,000 years was not "based upon and consistent with" recommendations of the National Academy of Sciences (NAS), as required by the Nuclear Waste Policy Act.

NAS had explicitly rejected a 10,000 year cut off as arbitrary, and recommended that "compliance with the standard be measured at the time of peak risk, whenever it occurs," and that "peak risks might occur tens to hundreds of thousands of years or even farther into the future."

The ruling was a major blow to the schedule and prospects of the dangerous proposal to bury 77,000 tons of HLRW on the earthquake fractured, sacred Western Shoshone Indian land above a major drinking water aquifer at Yucca.

In response to the court order, on August 22, 2005, the EPA published proposed revisions to the Yucca regulations (see www.epa.gov/radiation/docs/yucca/70fr49013.pdf) – the revisions are horrendous.

Dr. Arjun Makhijani of the Institute for Energy and Environmental Research (IEER) – who served on an EPA advisory panel regarding HLRW repository regulations in the past – has said of the recently proposed Yucca revisions: "I consider this the worst single action that the EPA has taken on radiation issues ever since I began analyzing them almost 25 years ago." (1) Disregarding all applicable, long-established laws, regulations, and inter-generational morality, the EPA has proposed – as Dr. Makhijani of IEER dubs it – a "double-standard standard."

EPA's proposal would, for the first 10,000 years post-burial of wastes, retain its original Yucca regulations, allowing a 15 millirem per year (mrem/yr) radiation dose from all pathways. This would amount to a lifetime risk of cancer for 1 in 835 people exposed to Yucca's leaking radioactivity, calculated according to the recent findings presented in the National Academy of Sciences Biological Effects of Ionizing Radiation report, "BEIR VII" (see WISE/NIRS Nuclear Monitor 632.5701, "U.S. Radiation Panel: No Radiation Dose Safe," July 15, 2005).

But, after 10,000 years, EPA now proposes allowing a 23-fold increase in "allowable" radiation doses to 350 mrem/yr, equivalent to 58 chest x-rays per year (2), which would cause a 1 in 36 lifetime cancer rate. About half of those cancers would be fatal. EPA typically has tried to limit risk to a 1 in 10,000 or even a 1 in 1 million rate of cancer.

EPA's proposal would only apply the Safe Drinking Water Act limit of 4 mrem/yr in Yucca's groundwater for the first 10,000 years. After that, the 350 mrem/yr limit would apply to drinking water, the major pathway through which the leaking wastes would reach "dose receptors" (the U.S. Department of Energy's (DOE) term for people) downstream.

To make matters worse, EPA's 350-mrem/yr figure is not a maximum permitted dose to the public, but rather a median dose, meaning that 50% of doses would be higher than 350 mrem/yr – large numbers of people would, under this proposed rule, get far higher doses. EPA proposes changing from the mean dose (add all the individual doses and divide by the total number of doses to arrive at the average dose, thus including very high doses in the mean) after 10,000 years to a median dose (the middle dose value, with an equal number of dose values above and below it – meaning that very high doses are simply disregarded, no matter how high they are). According to Dr. Robert Gould, chair of the security committee of Physicians for Social Responsibility, "the sky's the limit" as to how high doses could go because, incredibly, there is no upper limit for the half of the exposures that would be above the median. (3) These higher doses would carry proportionately higher health risks.

In DOE's Yucca Total System Performance Assessment for Site Recommendation, at the time of peak dose (after the waste packages corrode and fail), the mean dose of the many computer simulations is about 600 mrem/yr, whereas the median dose is about 200 mrem/yr. Yucca would not meet standards that required the mean to be less than 350 mrem/yr, but would if the median were used. EPA's use of a 350-mrem/yr median dose limit is thus a transparent attempt to keep Yucca "licensable," despite its clearly unsuitable geology. A median of 350 mrem/yr results in doses of 2,000 mrem/yr (2 rem/yr)

to the five percent of people most exposed; over a lifetime of such exposures, one in five women would contract cancer from Yucca's leaking wastes. (4)

EPA's proposed 350-mrem/yr dose would not just occur for a brief time and then decrease to far lower levels. Under EPA's proposal, these large doses would be permitted to occur year after year, generation after generation, forevermore into the future (well, out to a million years, after which time regulations would end). Under the EPA proposal – given the lack of a cap on maximum doses and the hundreds of thousands of years these leaking wastes would remain harmful – significant numbers of the people most exposed to radiation doses could suffer a statistical 100% risk of contracting cancer. (5) The State of Nevada has noted that EPA, on page 108 of the proposed rule, holds that exposures of the magnitude associated with un-mined uranium ore bodies meet the standard of "minimal justice" (explained below). EPA further states that estimates of the risks from un-mined ore bodies range upward to 100,000 excess cancer deaths over 10,000 years. So it follows that EPA believes ten excess deaths per year are acceptable. For a 1,000,000-year assessment period called for by the proposed Yucca rule, this means that ten million excess deaths would be acceptable to EPA. (6)

Dan Hirsch of Committee to Bridge the Gap has stated, "It is hard to conceive of a proposed environmental regulation or action that raises such serious questions of inter-generational immorality." The significant numbers of people who would die from Yucca's leaking wastes over the course of time would have had no say in the decision to open the dump, nor would have received any supposed benefit from it, or from the nuclear reactors that generated the HLRW in the first place. Those future generations would bear only the cost, a large human cost.

EPA explicitly admits to such deadly double standards, citing the Swedish National Council for Nuclear Waste's (KASAM) position that '…our moral responsibility diminishes on a sliding scale over the course of time," and advocating a "Strong Principle of Justice" for the first 5 or 6 generations (roughly 150 years), a "Weak Principle of Justice" for a further 5 or 6 generations after that, and then a "Minimal Principle of Justice" beyond that. (7) EPA's unethical and immoral proposal certainly would represent a horrible injustice for future generations. It is quite ironic because DOE explains its rush to open the Yucca dump as a matter of inter-generational responsibility in that current generations created the HLRW and thus should solve the problem so that future generations need not worry about it. (8) Future generations would have much to worry about if EPA's proposal stands.

EPA's use of the State of Colorado's relatively high level of "background radiation" in an attempt to justify allowing added doses of 350 mrem/yr to Yucca's neighbors is twisted and unacceptable. EPA cites the national average for background radiation as 350 mrem/yr. But even this is wrong and misleading. About two-thirds of that figure is due to radon exposures within houses and buildings. Only natural radiation, such as from cosmic rays and other natural sources that people are exposed to outdoors, which is difficult to avoid or control, should be considered "natural background." EPA's proposed 350-mrem/yr dose from Yucca would be in addition to the background radiation (including indoor radon) that people would already be exposed to.

It should be noted that residents near Yucca are also exposed to additional radioactive contamination from the nearby Nevada Test Site's nuclear weapons explosions and "low" level radioactive waste shipments and dumping there and at the nearby, leaking Beatty, Nevada "low" level atomic waste dump.

In NAS's recent BEIR VII study, it reported that about 1 in 100 Americans would contract cancer just from the non-radon component of background radiation. A full three percent of the American public can already be expected to contract cancer from their exposure to outdoor natural radiation plus indoor radon, so that this "background" dose of 350 mrem/yr is far from safe. Thus, EPA is proposing that a full six percent of the public living downstream from Yucca be allowed to contract cancer, half of that from "background" (including radon), and half from the leaking dump.

EPA has deceptively tried to blur the distinction between "background radiation" and Yucca's leaking wastes, both of which are harmful to human beings. EPA proposes adding the 1 in 36 cancer rate from Yucca to the 1 in 36 cancer rate from "background" radiation to yield a 1 in 18 cancer rate overall. (9)

EPA's proposed standards would be, by far, the worst in the Western world. France would limit maximum doses, estimated to occur hundreds of thousands of years in the future, to 25 mrem/yr. Canada limits doses to about 10 mrem/yr for 10,000 years, but does not allow a sudden increase after that. (1)

EPA will accept public comments on its proposal until November 21. Email comments to a-and-r-docket@epa.gov, Attention Docket No. OAR-2005-0083. Be sure to include all your contact information. Go to www.nirs.org for additional information, sample comments, and ways to take action.

Sources:

(1) IEER press release, "Environmental Protection Agency's Proposed Rule on Repository for High-Level Radioactive Waste Would Seriously Undermine Public Health," Aug. 9, 2005, http://www.ieer.org/latest/yuccaepapr0805.html

(2) EPA press release, "Whitman Announces Final Standards for Yucca Mountain on Public Health and Environmental Protection," June 6, 2001. Specifically, EPA stated that 3 chest x-ray were equivalent to18 mrem. See http://www.epa.gov/newsroom/newsreleases.htm

(3) Physicians for Social Responsibility phone-in press conference, Oct. 10, 2005.

(4) Dr. Arjun Makhijani, President, IEER, on Physicians for Social Responsibility phone-in press conference, Oct. 10, 2005.

(5) Email from Dan Hirsch, Committee to Bridge the Gap, Sept. 22, 2005.

(6) Phone conversation with and email from Bob Loux, Executive Director, State of Nevada Agency for Nuclear Projects, Oct. 10, 2005.

(7) U.S. Federal Register, Vol. 70, No. 161, Monday, Aug. 22, 2005, Proposed Rules, Environmental Protection Agency, 40 CFR Part 197, Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada, Page 49036.

(8) Personal conversation with Lake Barrett, Acting Director of DOE's Office of Civilian Radioactive Waste Management, Sept. 1999.

(9) See references #1 and #4, above.

Contact: Kevin Kamps at NIRS kevin@nirs.org

U.S.: FOR SAFETY'S SAKE, IT'S TIME TO PULL THE PLUG ON PALISADES

The owner (Consumers Energy) and operator (Nuclear Management Co. LLC of Hudson, Wisconsin) of the Palisades nuclear reactor on the Lake Michigan shoreline near South Haven have applied to the U.S. Nuclear Regulatory Commission (NRC) for a 20-year extension to the original 40-year operating license. But a growing coalition, including the Michigan Environmental Council, which represents 70 grassroots groups across the state comprising 200,000 members, stands in opposition.

(635-636.5721) Kevin Kamps and Alice Hirt - Operating the 38-year-old reactor for two more decades risks rupture of the highly deteriorated reactor vessel and catastrophic radiation release into the surrounding environment.

Palisades has, perhaps, the most embrittled reactor vessel in the United States. Neutron radiation from the nuclear chain reaction has seriously decreased the vessel's ductility, or flexibility. If, during emergencies, cooling water is pumped into the thermally hot and highly pressurized core, the pressurized thermal shock could rupture the brittle reactor vessel like a hot glass under cold water.

The nuclear fuel could then no longer be cooled or controlled. It could literally melt through the foundations of the plant into the groundwater below. Catastrophic amounts of deadly radioactivity would be released into Lake Michigan, which is a source of drinking water (and so much more) to tens of millions of people. As happened at Chernobyl, cancer-causing airborne radioactivity would blow with the wind to communities, such as Kalamazoo, dozens and hundreds of miles away.

A 1982 NRC report predicted that a meltdown and large-scale radiation release from Palisades would cause 1,000 fatalities and 7,000 injuries just in the first year, 10,000 cancer deaths over time, and more than US$50 billion in property damage. These figures, adjusted for inflation and population growth since then, would be even worse now.

But Chernobyl, which cost US$350 billion in just the first decade, shows how bad damage from a full-scale nuclear catastrophe can be.

Tellingly, Nuclear Management Co. responsible for operations at the plant, is a limited liability corporation, meaning it would largely or entirely avoid paying for damages resulting from its mistakes at Palisades, even catastrophic ones. And the federal Price-Anderson Act, a subsidy unique to the nuclear power industry, would shield the owner, Consumers Energy. Under Price-Anderson, if victims were compensated at all, it would be U.S. taxpayers, not Consumers Energy, paying the lion's share of damages. If Palisades is so safe, why don't Consumers and Nuclear Management Co. give up these liability protections?

Homeowners and car insurance companies know how risky nuclear power is – they refuse to insure against accidents. Just check your policy.

Palisades also has a serious waste problem. But it is not widely known that the pad under the outdoor silos containing high-level radioactive wastes just 150 yards from the waters of Lake Michigan is in violation of NRC earthquake regulations. A quake could send wastes into the Lake.

Palisades has no safe place to store the wastes that it continues to generate. Yucca Mountain is no solution to the nuclear waste crisis, but rather a fatally flawed illusion. U.S. Senator Debbie Stabenow, D-Lansing, was right when she voted against this dangerous boondoggle in 2002, citing as her main objection the U.S. Department of Energy's risky proposal to barge 70 casks of high-level radioactive waste up the Lake Michigan shoreline from Palisades to the Port of Muskegon as part of its Yucca plan.

But even if Yucca does open someday, it has a legal limit to how much waste it could accept. There will be enough waste in the United States by 2010 to fill Yucca, long before it ever opens. This means that even if the 585 tons of deadly high-level radioactive waste generated at Palisades from 1971 to 2011 gets buried at Yucca, the nearly 300 tons that would be generated from 2011 to 2031 during the extended license would be stuck on the Lake Michigan shoreline, with nowhere to go.

Shutting Palisades in 2011, the current operating license expiration date would prevent the generation of that excess waste. Not making it in the first place is the only solution we have for the vexing problem of high-level radioactive waste.

This article was originally published in the Kalamazoo Gazette on September 18, 2005 entitled "Condition of Palisades nuclear reactor too risky to keep running".
Kevin Kamps was born and raised in Kalamazoo and watchdogged Palisades as a volunteer from 1993 to 1999 while also directing the Chernobyl Children's Project. Since 1999, he has served as nuclear waste specialist at the Nuclear Information and Resource Service in Washington, D.C.

Alice Hirt is a member of West Michigan Environmental Action Council, and a board member of the organization, Don't Waste Michigan, which stopped eight midwestern states' radioactive wastes from being dumped in Michigan. Both groups have applied to the NRC to officially intervene against the 20-year license extension at Palisades.

Contact: Kevin Kamps at NIRS
Kevin@nirs.org

STATUS OF NUCLEAR REACTOR LICENSE EXTENSIONS IN THE UNITED STATES

Data arranged:
Reactor; Location; Operations Began; End of 40 Yr. License; End of 60 Yr. License

"Completed Applications" (NRC-approved 20 year license extensions)

Calvert Cliffs, Units 1 and 2; Lusby, Maryland; 1975 & 1977; 2015 & 2017; 2035 & 2037
Oconee Nuclear Station, Units 1, 2 and 3; Seneca, South Carolina; 1973, 1974 & 1974; 2013, 2014 & 2014; 2033, 2034 & 2034.
Arkansas Nuclear One, Unit 1; Russellville, Arkansas; 1974; 2014; 2034.
Edwin I. Hatch Nuclear Plant, Units 1 and 2; Baxley, Georgia; 1975 & 1979; 2015 & 2019; 2035 & 2039.
Turkey Point Nuclear Plant, Units 3 and 4; Florida City, Florida; 1972 & 1973; 2012 & 2013; 2032 & 2033.
North Anna, Units 1 and 2; Mineral, Virginia; 1978 & 1980; 2018 & 2020; 2038 & 2040.
Surry, Units 1 and 2; Gravel Neck, Virginia; 1972 & 1973; 2012 & 2013; 2032 & 2033.
Peach Bottom, Units 2 and 3; Delta, Pennsylvania; 1974; 2014; 2034.
St. Lucie, Units 1 and 2; Hutchinson Island, Florida; 1976 & 1983; 2016 & 2023; 2036 & 2043.
Fort Calhoun Station; Fort Calhoun, Nebraska; 1973; 2013; 2033.
McGuire, Units 1 and 2; Cornelius, North Carolina; 1981 & 1984; 2021 & 2024; 2041 & 2044.
Catawba, Units 1 and 2; Clover, South Carolina; 1985 & 1986; 2025 & 2026; 2045 & 2046.
H.B. Robinson Nuclear Plant, Unit 2; Hartsville, South Carolina; 1971; 2011; 2031.
R.E. Ginna Nuclear Power Plant; Ontario, New York; 1970; 2010; 2030.
V.C. Summer Nuclear Station; Parr, South Carolina; 1984; 2024; 2044.
Dresden, Units 2 and 3; Morris, Illinois; 1970 & 1971; 2010 & 2011; 2030 & 2031.

Quad Cities, Units 1 and 2; Cordova, Illinois; 1973; 2013; 2033.
Farley, Units 1 and 2; Dothan, Alabama; 1977 & 1981; 2017 & 2021; 2037 & 2041.
Arkansas Nuclear One, Unit 2; Russellville, Arkansas; 1980; 2020; 2040.
D.C. Cook, Units 1 and 2; Bridgman, Michigan; 1975 & 1978; 2015 & 2018; 2035 & 2038.

Applications Currently Under Review:

Browns Ferry, Units 1, 2, and 3 (Application received January 6, 2004); Decatur, Alabama; 1974, 1975, and 1977; 2014, 2015 & 2017; 2034, 2035 & 2037.
Millstone, Units 2 and 3 (Application received January 22, 2004); Waterford, Connecticut; 1975 & 1986; 2015 & 2026; 2035 & 2046.
Point Beach, Units 1 and 2 (Application received February 25, 2004); Two Rivers, Wisconsin; 1970 & 1972; 2010 & 2012; 2030 & 2032.
Nine Mile Point, Units 1 and 2 (Application received May 27, 2004); Scriba, New York; 1969 & 1988; 2009 & 2028; 2029 & 2048.
Brunswick, Units 1 and 2 (Application received October 20, 2004); Southport, North Carolina; 1977 & 1975; 2017 & 2015; 2037 & 2035.
Monticello (Application received March 24, 2005); Monticello, Minnesota; 1971; 2011; 2031.
Palisades (Application received March 31, 2005); Covert, Michigan; 1971; 2011; 2031.
Oyster Creek (Application received July 22, 2005); Forked River, New Jersey; 1969; 2009; 2029.

Future Submittals of Applications: Letters of Intent to Apply for License Renewal

Beaver Valley Units 1 and 2; Shippingport, Pennsylvania; 1976 & 1987; 2016 & 2027; 2036 & 2047.
Pilgrim; Plymouth, Massachusetts; 1972; 2012; 2022.
Wolf Creek; Burlington, Kansas; 1985; 2025; 2045.

A total of five unspecified Entergy Nuclear Power Plants (Entergy owns FitzPatrick in New York; Indian Point 3 in New York; Pilgrim in Massachusetts; Arkansas Nuclear One 1 and 2 in Arkansas; Grand Gulf in Mississippi; River Bend in Louisiana; and Waterford 3 in Louisiana).

Susquehanna Units 1 and 2; Berwick, Pennsylvania; 1983 & 1985; 2023 & 2025; 2043 & 2045.

A total of four "Not Publicly Announced" Nuclear Power Plants;

Shearon Harris; New Hill, North Carolina; 1987; 2027; 2047.
Three Mile Island Unit 1; Londonderry Township, Pennsylvania; 1974; 2014; 2034.
Vogtle Units 1 and 2; Waynesboro, Georgia; 1987 & 1989; 2027 & 2029; 2047 & 2049.
Kewaunee; Carlton, Wisconsin; 1974; 2014; 2034.
Prairie Island Units 1 and 2; Red Wing, Minnesota; 1973 & 1974; 2013 & 2014; 2033 & 2034.
Cooper; Brownville, Nebraska; 1974; 2014; 2034.

Two unspecified STARS (Strategic Teaming and Resource Sharing) Nuclear Power Plants [which could be either Comanche Peak 1 and 2, Glen Rose, Texas, 1990 & 1993, 2030 & 2033, 2050 & 2053; Callaway, Fulton, Missouri, 1985, 2025, 2045; Wolf Creek (see above); Diablo Canyon 1 & 2, Avila Beach, California, 1985 & 1986, 2025 & 2026, 2045 & 2046; South Texas Project 1 and 2, Palacios, Texas, 1988 & 1989; 2028 & 2029; 2048 & 2049; or Palo Verde 1, 2, and 3, Wintersburg, Arizona, 1986, 1986, & 1988/2026, 2026, & 2028/2046, 2046, & 2048;

Duane Arnold; Palo, Iowa; 1975; 2015; 2035.
Davis-Besse; Oak Harbor, Ohio; 1978; 2018; 2038.
Crystal River Unit 3; Red Level, Florida; 1977; 2017; 2037.
Perry Unit 1; North Perry, Ohio; 1987; 2027; 2047.

Sources: U.S. Nuclear Regulatory Commission website at http://www.nrc.gov/reactors/operating/licensing/renewal/applications.html, downloaded on Oct. 10, 2005; American Nuclear Society/Nuclear News, "Commercial Nuclear Power Plants, United States – 2001," wall map/poster, 2001.

UKRAINE: NO MORE REACTORS, ENERGY SAVINGS ARE KEY

About 100 environmental activists held an action on October 5th conveying the message "NO to new reactors, YES to energy conservation!" near the Ukrainian Cabinet of Ministers in Kiev.

(635-636.5722) NIRS -
Representatives of six Ukrainian NGOs (Bakhmat, Ecoclub, Green World, MAMA-86, National Ecological Centre of Ukraine and Voice of Nature) voiced opposition against the government's plans to build 11 new nuclear reactors by 2030 and spoke with government officials who came out to meet them.

The government's plans were announced in May 2005 and later confirmed at parliamentary hearings on the development of country's energy sector.

Environmentalists believe that energy conservation has enormous potential to improve the energy situation in Ukraine where huge amounts of energy are lost in industrial and municipal enterprises leading to the over-consumption of natural gas, oil, coal and electricity. The energy intensity of Ukrainian Gross Domestic Product (GDP) is 2 to 4 times higher than in other European countries.

Yevgeny Kolishevsky, executive director of Voice of Nature, maintained, "We are not calling for the immediate closure of nuclear power plants in Ukraine but we do oppose new construction and life extensions". He also added, "We strongly demand that the new Government of Ukraine includes a set of concrete measures aimed at increasing energy efficiency in all sectors of the Ukrainian economy into the Program of Energy Sector Development of Ukraine for the period running to 2030."

Yury Urbansky, from the National Ecological Centre of Ukraine and CEE Bankwatch Network, said, "We have serious concerns about the safety of Ukraine's nuclear power plants. The implementation of the state program of a safety upgrade for existing reactors has failed, the Parliament ratified loans provided by the European Bank for Reconstruction and Development and Euratom for the modernisation of the Khmelnitsky-2 and Rivne-4 reactors commissioned in 2004 with a one year delay, problems connected with radioactive waste management continue to go unsolved and there are no signs for progress in the near future. A government ignorant of the issues of nuclear safety has no right to even think about plans for nuclear expansion!"
The NGOs challenged the newly appointed government with the following questions:

- Why is the government deciding to build new reactors without proper public discussion?

- When will a thorough assessment of energy losses in Ukraine's industrial and municipal sectors be conducted, followed up by measures for decreasing the huge losses of heat, water and electricity?

- When will the people of Ukraine stop paying for bad management in the municipal sector?

- When will the development of renewable sources of energy get real backing from the state?

- When will the government cease using public money to subsidise nuclear energy?

The action was accompanied by a drum-roll on barrels resembling containers of radioactive waste to remind officials of the need to listen to public opinion. Numerous television stations were present at the action providing extensive, and generally favorable, media coverag e.

Apart from delivering a very serious message, the event also generated a humorous moment when several hundred former Foreign Service and ex-KGB staff marched unexpectedly to the same site and crowded around the anti-nuclear protestors. Having gathered to seek greater retirement benefits, they appeared bewildered by the anti-nuclear messages surrounding them; nevertheless their ranks gave the appearance – especially on television – of a much larger demonstration. After about 15 minutes however, the retired civil servants were told their march was not authorized and they left.

Sources: CEE Bankwatch Network press release, October 5, 2005

Contact: Natasha Vyshnevska, Voice of Nature
Tel +380 50 5455928
Email: nvishnevskaya@ukr.net

POTENTIAL FOR SUSTAINABLE ENERGY DEVELOPMENT IN UKRAINE

The following excerpts are taken from an article soon to be published in "Potential" magazine - a publication issued by the U.S.-Ukraine Foundation (based in Washington DC and Kyiv) that can be found at http://www.usukraine.org/potential.shtml.

United Nations "Millennium Development Goals" says, "Ukraine is one of the least energy-efficient countries in the world" because of its inefficient, Soviet-era industries.

Ukraine consumed 154.4 billion kilowatt-hours (kWh) of electricity in 2003 and has sufficient generating capacity to supply more than twice its needs. Its power sector is the twelfth largest in the world in terms of installed capacity, with 54 gigawatts (GW).

Ukraine imports:

- 80-90% of its oil - about 80% from Russia and lesser amounts from Kazakhstan.

- 75-80% of its natural gas, primarily from Russia and Turkmenistan.

- 100% of its nuclear fuel from Russia - 40% of its electricity is provided by its five nuclear power plants.

Renewable Energy In Ukraine

Renewable sources currently supply approximately 8% of Ukraine's electricity generation and approximately 2% of its total energy consumption. However, it has considerable largely untapped renewable energy resources that, theoretically, could satisfy a substantial portion of its energy needs, particularly if coupled with a comprehensive effort to improve overall
energy efficiency.

Solar

Ukraine was once the centre of the former Soviet Union's program on solar thermal water heating. Today, there is only limited use of direct solar energy in Ukraine but its favourable climate suggests that there is potential for the development of the country's solar resources.

Wind

Technically and economically suitable for development in nearly 40% of the country. Recent estimates project mid-term potential for wind generation to be 5,000 MW of capacity, with more than 1,000 MW of that in Crimea alone - sufficient to generate more than 42 TWh/year of electricity.

Geothermal Energy

Ukraine has considerable, but largely untapped, geothermal resources. Presently, total installed capacity is only 13 MWth. However, the State program for using renewable energy sources envisions increasing the use of thermal water significantly. Initially, announced goals were to ramp up to 200 Mwt by 2005 and to 250 Mwt by 2010.

Biomass & Biofuels

Current contribution to Ukraine's energy supply is less than 0.5% but studies suggest that biomass sources could provide at least six times more to Ukraine's energy mix.

Nearly 16% of the country is covered by forest and while half of this acreage is environmentally sensitive, the recoverable wood energy potential - including lumber mill waste - was estimated in 1999 to be approximately 1.1 - 1.58 million toe (Tons of Oil Equivalent).

Energy that could be provided by biogas derived from animal manure was estimated to be in the same range (i.e., 1.1 - 1.6 million toe). Landfill gas could provide another 0.13 million toe while biogas from sewage sludge could further expand this total.

Ukraine is well positioned to grow biomass commercially and has the natural resources to produce a variety of energy crops that could used for direct combustion as well as conversion into ethanol and biodiesel fuels.

Hydropower

Average annual hydropower generation in Ukraine totals 10.7 TWh (10.7 billion kWh) and that presently satisfies about 7% of the country's electricity demand. Installed hydro capacity totals 4.4 GWh (4.4 million kWh). Hydro potential has been estimated to be 17 TWh/a for large and 3.7 TWH/a for small hydro power plants.

Recently, the European Bank for Reconstruction and Development reported that some 327 MW of potential new hydro projects exist, with 220 MW of that on the Tisa River alone.

Source and Contact:

Ken Bossong, Co-director, Ukrainian-American Environmental Association, 8606 Greenwood Avenue, #2, Takoma Park,
MD 20912 and 11 Strutynska Street, # 18, Rivne, Ukraine 33003

Tel +1 (301) 588-4741 and
+38 (067) 750 5192
Email: kbossong@hotmail.com or ua_ea@yahoo.com

Web: hyperlink "http://www.ua-ea.org" http://www.ua-ea.org

WHITEWASHING THE CHERNOBYL FENCE

This article is a follow-up to comments published in the last *WISE/NIRS Nuclear Monitor* on the UN press release of September 5, 2005 on Chernobyl's health effects. We reference a World Health Organization (WHO) report entitled: Health Effects of the Chernobyl Accident and Special Health Care Programmes Report of the UN Chernobyl Forum Expert Group "Health", Working Draft August 31, 2005. From this report and others in this series, the International Atomic Energy Agency (IAEA) created *Chernobyl's Legacy: Health, Environmental and Socio-economic Impacts* and *Recommendations to the Governments of Belarus, the Russian Federation and Ukraine*.

(635-636.5723) NIRS - The shadow of WHA 12.40 covers the aforementioned WHO report. **WHA 12.40 is the agreement between WHO and IAEA that allows either to keep information from the other, which would hurt their respective mandates**. (See in this issue "Who is WHO protecting?") Since it is the IAEA's mandate "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world", it is doubtful that IAEA could conduct unbiased health studies on the effects of the Chernobyl nuclear explosion. In fact, IAEA has no mandate to conduct health studies at all.

While several UN organizations have their name associated with this report, the IAEA has clearly influenced the publicity surrounding its contents. The press release reflects the IAEA position with statements like "4,000 cases of thyroid cancer [have resulted], mainly in children, but that except for nine deaths, all of them have recovered." One does not always "recover" from thyroid cancer. If the thyroid is removed, the patient must take pills for the rest of his or her life just to maintain normalcy – if pills are available at all that is. This is not recovery.

NOT AVAILABLE TO REPORTERS OR PUBLIC

IAEA obviously planned to release its report and press statement before the public had access to the documents on which its "report" was based. After reading the health section noted above, it is clear why they chose this strategy. They needed to spin this report in their direction. Here are some of its conclusions:

A LOT OF DISEASE INCREASES

· "…**ionizing radiation is known to cause most types of cancers**…"

· They found **more thyroid cancers, in less time than their previous estimates from other populations**. They state that detection was most likely not a factor.

· There is **definitely a causal relationship between radioactive iodine and thyroid cancer among those exposed as children or young people**.

· **Increase in leukemia has been found among those exposed in-utero across Europe**, also specifically in Greece and Belarus.

· In **Ukraine, total incidence in adult leukemia and lymphoma increased** from 5.1 per 100,000 person-years before the accident to 11 per 100,000 after the accident.

· There has been a "**significant increase" of pre-menopausal breast cancer** among women exposed before age 45 in Belarus and Ukraine.

· To date there has been **little study of solid cancers** other than thyroid among Chernobyl exposed populations. Many **solid cancers do not manifest until 15 or 20 years after exposure**.

· Even **relatively low doses of radiation are associated with lens opacity**. Beta radiation may be more damaging than gamma in this case.

· **Increases of endocrine, blood, circulatory and digestive systems diseases** were found in greater prevalence among more contaminated areas.

· There is **significant elevated risk of cardiovascular disease** among emergency workers.

· "There has been a **slow but steady increase in congenital malformations recorded** in both high and low contamination areas…"

· "**Anomalies of the extremities** (such as polydactyly – having more than the normal amount of digits) are some of the **most frequent findings in Chernobyl-affected children**…"

· There was a **spike in Downs Syndrome cases** in January 1987 following the accident. No *overall*

increase is noted, according to the report.

· There is a **high level of infant mortality** in both contaminated and control areas. The report gives no cause.

THE CAVEATS

Miraculously, with the exception of breast cancer, infant mortality and thyroid cancer, for which they find absolving radiation rather difficult, none of the other disease increases seem to be tied to radiation exposure. In an amazing feat of "scientific" jujitsu, the WHO, no doubt at the urging of the IAEA, scramble to attribute these health effects to anything other than radiation.

For instance, while they **found an excess of adult leukemia and lymphoma**, they claimed there was no correlation between amount of disease and level of contamination. Therefore, the report is unwilling to say this increase is due to radiation. In other words, they found an increase for time, but not for place. Indeed, the report concludes "the possibility of conducting studies of such adults with adequate power seems remote so that risk estimates in the future will have to be based upon sources other than direct observation of the Chernobyl population." Several sources using direct measurement of radioactivity show how spotty the radiation contamination was and how one plot of land could be very "hot" while the one sitting next to it could be less so. Add to this just a few confounding factors such as the ignored restrictions on circulating contaminated foodstuffs, error-ridden dose reconstruction formulas, individual susceptibility; and the fact that there was an overall increase becomes quite compelling. Linking this disease increase to levels of land contamination seems an exercise in futility in light of the circumstances and an attempt to link the two could, in fact, obscure the cause of health effects they *are* seeing.

Endocrine, blood, circulatory and digestive diseases are elevated, but the report attributes these mostly to lifestyle choices and psychosocial trauma. In fact, Professor Bandazhevsky's* work found similar disease increases (also including nervous system) equated with an individual's body burden of radionuclides. Prof. Bandazhevsky in an unpublished report, which NIRS has on file, found a direct correlation between contamination level of an individual and disease.

There are **overall increases in congenital abnormalities, but the increases do not show a dose-response pattern**. There were less congenital abnormalities in the areas of higher contamination. But the report fails to address if this is due to planned or spontaneous abortions. Was the dose in the higher dose area high enough to cause some pregnancies to spontaneously end? How many women became pregnant and had no idea only to have the pregnancy end, also without their knowledge? Perhaps these women knew they were in areas of higher contamination and decided to have abortions or not become pregnant. The report remains silent on these questions and instead absolves radiation without a full accounting of the necessary issues.

The study is unwilling to attribute the increase in in-utero leukemia numbers to radiation from Chernobyl (they are not counting Strontium-90 exposure in the dose numbers, see below) since, while it appears to be a widespread trend, it is rarely statistically significant. The report also **recommends more analytical studies that would include exposure doses to individuals**, but they also say that these may not have sufficient statistical power to mean anything because of the assumed small doses.

DEATHS NOT INCIDENCE

According to the press release mentioned in the last *Nuclear Monitor*, 4000 people will die from radiation exposure from Chernobyl. Make no mistake, 4,000 deaths is a horrible, unacceptable number for a disaster of any kind. But this number is not the whole story. Not only might it be an underestimate, based on error-ridden assumptions, it also does not account for the numbers of people who fall ill due to the radiation from the Chernobyl nuclear explosion. Not everyone who gets cancer dies; or dies from cancer or a disease caused by radiation.

THE PERPETUAL DOSE HANG-UP

Equating dose with disease is better for protection, although still not protective enough, but is not appropriate after exposure. We need to let the disease incidence speak to us, not try to base the causation on dose because there are too many scientific uncertainties and pitfalls. Assessing individual dose can be a valid tool. However, up to this point "experts" often use dose to discount radiation as the cause of disease specifically because their estimates show the doses were too low to cause the effect. Of course this discounts individual susceptibility and assumes that models of disease from other exposure scenarios and other genetically & culturally different populations are relevant to the Chernobyl survivors. This is a big assumption. Often there will be an increase in a disease that can be caused by radiation, but "experts" won't attribute it to radiation and will instead claim that the increase was due to something else, often unspecified.

In fact, this report points out the danger of assumptions by referencing research on thyroid cancer: "The number of thyroid cancers in individuals exposed in childhood, particularly in the severely contaminated areas of the three affected countries, is considerably greater than expected, based on previous knowledge."

"…factors, in addition to ionizing radiation, are almost certainly influencing the risk. Some such factors include age at exposure, iodine intake and metabolic status, endemic goiter, screening, short-lived isotopes other than 131I, higher doses than estimated, and, possibly, genetic predisposition." This proves the point that you can't compare doses in one population to doses in another and expect the same health result. Further, though these factors play a role, there would still not be elevated rates of thyroid cancers were it not for radionuclide deposition from the Chernobyl explosion. The fact is no radiation exposure happens devoid of these other factors, and the blame for the disease induction lies squarely on the shoulder of ionizing radiation.

STILL NOT CONSIDERING SR-90

Nor do they consider dose for every radionuclide released. For instance, in the UNSCEAR 2000 report, the **dose reconstruction does not account for SR-90 exposure**. NIRS has been pointing this out for at least 3 years. In fact, this recent Draft WHO **report recognizes this rather glaring omission** under the Gaps in Knowledge section of chapter 5: **"Internal doses resulting from intakes of SR-90 and of PU-239 have received limited attention."** The excuse the UNSCEAR report gives is that SR-90 was not deposited as far and wide as other isotopes such as Cs-137. However, upon further cursory research, NIRS found that **in Finland background levels of SR-90 (not a naturally occurring isotope) increased by 12% after the Chernobyl** explosion in some places.

RECOGNIZE MENTAL HEALTH IMPACTS, BUT WITH A DIFFRENT TWIST

In an interesting twist on the "radiation effects are all in their heads" idiocy, the **report recognizes the very real emotional and mental consequences** of the accident. It calls the Chernobyl explosion "…by far, the worst industrial disaster on record…[it] unleashed a complex web of events and long-term difficulties, such as massive relocation, loss of economic stability, and long-term threats to health in current and, possibly, future generations, that resulted in an increased sense of anomie and diminished sense of physical and emotional balance."

For the first time, they claim not only that there are mental health effects, but also that legitimate health threats are part of the reason for these mental states. The people are not merely having an unwarranted phobia of radiation; the reasons for the mental stress are logical, real and solely a result of the Chernobyl explosion and its radioactive contamination. The report still contends that "unexplained" physical symptoms, which continue to this day, are due to mental stress. The researchers also say more information is needed regarding radiation effects on the brain.

Obviously, this is not the "definitive" report the UN, particularly the IAEA tried to sell it as or would like it to be. It shows increases in several radiation related diseases and no amount of blame redirection will change this.

* [Professor Yuri Bandazhevsky was jailed on fabricated charges likely as a result of his work on the radiological effects of cesium-137 and his criticism of Belarussian authorities attempts to hide the full extent of the damage done to the population's health by the Chernobyl disaster. See also *WISE/NIRS Nuclear Monitor* 553.5308 "Belarus: Bandazhevsky adopted as prisoner of conscience". He was recently released after serving four of an eight-year sentence.]

Contact: Cindy Folkers at NIRS
cindyf@nirs.org

WHO IS WHO PROTECTING?

The *WISE News Communique* 521 from November 19, 1999 featured an article by Rosalie Bertell, then President of the International Institute of Concern for Public Health in Toronto, Canada, entitled the "Conflict of interest between IAEA and WHO". That article is still very much relevant today as NGOs and even political parties speak out against the recently released IAEA/WHO report that seeks to negate the very real and truly horrifying effects of the Chernobyl disaster.

In the article, Dr. Bertell questions the agreement signed between the World Health Organization (WHO) and the International Atomic Energy Agency (IAEA) on May 28, 1959 – Res. WHA 12-40, 28.5.59.

The same agreement was the subject of a January 2000 petition initiated by the Women's International League for Peace and Freedom (WILPF). In a letter accompanying the petition, WILPF expressed the concern signatories had about the WHO's silence on the effects of radiation on human health and urged the amendment of the agreement to allow the WHO complete freedom to investigate and publish information on the matter. WILPF also enquired as to why proceedings of a congress on Chernobyl held in November 1995, and organized by the WHO, had never been published although the proceedings on an IAEA congress on Chernobyl held in April 1996 had been published within five months. *Continued overleaf.*

The petition made three specific requests, the first of which was the removal of the requirement stipulating that any WHO program on the health effects of nuclear energy must first be discussed with and agreed by IAEA. (For full petition visit http://nucnews.net/nucnews/2000nn/0001nn/000116nn.htm)

Under Article I of the agreement – Cooperation and Consultation – IAEA and WHO "…will act in close co-operation with each other and will consult each other regularly in regard to matters of common interest" [I (1)] and "Whenever either organization proposes to initiate a programme or activity on a subject in which the other organization has or may have a substantial interest, the first party shall consult the other with a view to adjusting the matter by mutual agreement" [I (3)].

In 1958, prior to the agreement, WHO had organized a meeting on the genetic effects of radiation and a year later hosted another on "Mental Health Aspects of the Peaceful Uses of Atomic Energy". Discussions were held on the problems posed to the public, particularly by excessive worry over health effects so it was proposed that the public should not be given full disclosure – for our own protection you see.

Since signing the agreement WHO has seemingly deferred to IAEA on matters concerning the negative effects of nuclear power, and refrained from making public any information that could negatively impact the IAEA's role as nuclear promoter, which always appears the strongest of its two personalities.

Sources: *WISE News Communique* 521.5111 "Conflict of interest between IAEA and WHO", November 19, 1999; WILPF letter to WHO, January 20, 2000; Petition: Health risks of nuclear energy: Terminating or at least Amending the Agreement between the International Atomic Energy Agency and the World Health Organization, January 2000; Annex 11 of the Res. WHA 12-40 of May, 28 1959

CANADA: FEDERAL AGENCY PROPOSES ONTARIO AS WASTE DUMP

Nuclear Waste Watch (NWW), a coalition of Canadian environmental groups has warned the McGuinty government to expect political fights across Ontario if it supports the continued production of nuclear waste and accepts the recommendation of a federal agency to possibly bury waste in Ontario.

(635-636.5724.) Nuclear Waste Watch – "The mayors of all the major centres in Northern Ontario have said 'no' to nuclear waste dumping. And now the cities of North Bay and Temiskaming Shores have rejected the transport of nuclear waste through their communities. Opposition will only grow if northern Ontario is selected as a nuclear dump for Southern Ontario," said Brennain Lloyd, Coordinator of Northwatch, a coalition of environmental and social justice groups in northeastern Ontario.

The environmental groups released a report card and background paper on the Nuclear Waste Management Organization's (NWMO) recommendation to bury nuclear waste in deep rock formations. After being given a 2002 mandate by the federal government to recommend a Canadian option for the long term management of radioactive waste, the NWMO has released a draft plan spanning 300 years and costing CAN$24 billion (US$20.5 billion) to bury Canada's high-level nuclear waste in either Quebec, Ontario or Saskatchewan.

"The NWMO gets a failing grade for refusing to support nuclear phaseout. If we don't shut our nuclear reactors down, Ontario communities are doomed to the perpetual production and transportation of radioactive waste. Nobody wants radioactive waste in their backyard or on their roads," said Dave Martin, Energy Coordinator for Greenpeace.

"Premier McGuinty said that Ontario 'would have its say' if it was selected for a radioactive waste dump. It's hypocritical for him to consider adding to the problem by building new nuclear plants."

Similarly, Ontario Northern Affairs Minister Bartollucci has said that northerners will 'raise hell' if the federal government tries to dump nuclear waste in Northern Ontario, and made it clear in a letter to the NWMO that he is opposed to any such scheme

"More nuclear waste means more nuclear transport, and means more nuclear fights in Ontario communities," said Dr. Gordon Edwards, President of the Canadian Coalition for Nuclear Responsibility. " Premier McGuinty can limit the damage only by investing in cleaner, cheaper and safer renewable energy." Any socially acceptable nuclear waste strategy, environmentalists say, depends on stopping nuclear waste production by phasing out Canada's 20 nuclear reactors. Without $17 billion or more in subsidies, all of Ontario's

20 nuclear reactors will be forced to close by 2020. The environmental groups say that deadline should be adopted now to halt the production of nuclear waste.

Source: Nuclear Waste Watch press release, September 15, 2005
Contact: Dave Martin, Energy Coordinator, Greenpeace Canada
Email: dave.martin@yto.greenpeace.org
Tel +1 416-597-8408 X 3050 or +1 416-627-5004

Brennain Lloyd, Coordinator, Northwatch,
Tel +1 705-498-7907
Dr. Gordon Edwards, Canadian Coalition for Nuclear Responsibility,
Tel +1 514- 839-7214

JOINT PROJECT WORKSHOP 2005: PLEX AND NUCLEAR WASTE

The Österreichisches Ökologie-Institute (Austrian Institute for Applied Ecology) hosted a three-day workshop on the issues of Plant Lifetime Extensions (PLEX) for nuclear power plants and nuclear waste from September 28th to 30th.

(635-636.5725) WISE Amsterdam – Nearly 20 organizations from Austria, Bulgaria, Czech Republic, Denmark, Finland, Netherlands, Romania, Slovak Republic and Sweden sent participants to attend the workshop in Vienna where knowledge was shared and views exchanged on the increasing trend that has seen many dangerously aged nuclear power plants being given lifetime extensions beyond that which they were designed for, and also to discuss the problems of regional and international waste storage repositories as proposed by IAEA and Euratom.

Participants discussed the practical problems of PLEX – the degradation of ageing components, reduction of safety margins leading to increased risks, increased plant capacity, the accumulation of more nuclear wastes – and also the political implications, given that life extensions are often politically motivated and less resisted than new nuclear plants.

The renowned scientific consultant, Dr. Helmut Hirsch opened the workshop with a presentation detailing the problems and risks of PLEX. To begin, Dr. Hirsch clarified the latest nuclear lobby acronyms for PLEX – PLIM (Plant Life Management) and LTO (Long-term Operation) and the different license types. Although commercial lifetimes of 30-40 years are generally assumed when licenses are issued, some countries have operating licenses with fixed plant lifetimes (40 years in U.S., 30 years in Hungary) or open licenses with regular safety reviews (Czech Republic, France, Spain). Some also issue unlimited licenses although explicit terms are usually involved.

Dr. Hirsch comprehensively described the problems associated with PLEX from the ageing of components and systems (influences, effects, consequences and counter-measures), the reduction of safety margins due to power uprates and increased burn-up to the consequences of "risk-orientated regulation". One of the most disturbing problems being the ageing of components, which can lead to corrosion causing pipelines to crack or embrittlement that can in turn lead to reactor pressure vessel failure particularly in older plants like PWRs. In addition to this, ageing parts tend to cause an increase in the number of small incidents, which when undetected can develop into serious accidents. In many cases it is not possible to replace components, or the process is both too complicated and/or so costly that operators shy away from these options. And instead of inspection and monitoring procedures being intensified for older plants, the high costs of such regimes can be preclusive because operators are usually responsible for the cost of inspections.

The presentation concluded with the horrifying reminder that PLEX increases risks due no only to ageing but also because of power uprates and higher burn-up, regulatory practices becoming more lenient and an increasingly ageing nuclear workforce, which often results in the diminishing competency of personnel at plants. His full presentation can be found at http://www.nuclear-waste-watch.org/files/PLEX_Presentation.pdf.

Participants then described the PLEX situation in some of their countries. In most decisions had already been taken to extend licenses of ageing plants.

Bulgaria's Kozloduy units 3 & 4 were meant to shut down in 2006 but 10-year extension licenses were already issued in 2003. Units 5 & 6 are issued licenses on an annual basis. In Bulgaria, national laws are also used to circumvent international laws – for example, the only EIA, from 2001, covering all six units and radioactive waste became invalid when the country's environmental law changed in 2002 but no new limits have been set.

In the Czech Republic, units 1-4 at the Dukovany NPP, originally issued with 40-year licenses, are to seek license extensions and there are

rumors that two EPRs will be built with construction to begin from 2015-2020 and operation to begin 2025-2030.
Finland originally gave its four units (FIN 1-4) 40-year licenses but has since extended their lifetimes by 20 years. Finland is also now prospecting for uranium.

Hungary's four units of VVER-440/213 type reactors at Paks NPP with original lifetimes of 30 years are due to expire between 2012 (first unit) and 2017 (fourth unit). But operation could be extended by another 20 years – three licences (environmental, water and operational) required from three authorities for continued operation. Operational licenses for PLEX have to be acquired for each reactor, four years before the original lifetime expires (2008 for unit 1, 2013 for unit 4) but this is only a "theoretical license" meaning that continued operation is theoretically permitted, but the actual operational license has to be renewed at the date of expiration (2012 for unit 1, 2017 for unit 4).

The licensing process already started in 2002 and Paks submitted the preliminary environmental assessment study to the environmental authority (ADUKÖFE) in December 2004. Hungarian NGO Energy Club registered as a client, received the study for evaluation and has handed in its comments to the authorities (see http://www.energiaklub.hu/doc/hirek/Comments_EIA_Paks.pdf). In May ADUKÖFE ordered that a detailed EIA study be completed by June 2007.

Action can still be taken. In accordance with the Espoo Convention, neighbouring countries should indicate intention to participate in the EIA process to the Hungarian Ministry of Environment and NGOs should raise this issue with their governments.

Decommissioning of Slovakia's Mochovce is due to begin in 2006 but Bohunice units 1-2 are expected to be extended – units 3-4 are still licensed until 2015.
All ten Swedish plants are due to shut down in 2010 but there is no longer any obligation to honour to this because the referendum law that originally stipulated the closure date no longer exists. Licenses are given on a 2-year basis following annual inspections but no EIA is required. KBS-3, a conditioning facility for the final storage of spent fuel is to be completed in 2020.

The day concluded with Wolfgang Kromp from the Institute of Risk Research at the University of Vienna offering fellow participants another angle with which to campaign against PLEX. He opined that licensing procedures should now be carried out in respect of the altered present and future climatic conditions. Since the licensing of nuclear installations is based on external events, which are directly or indirectly affected by climate change, it should now be essential for the frequency and intensity of meteorological events to be reassessed, thus necessitating the modification and upgrading of procedures. Using the example of the 2002 heat wave in Europe and its effect on the cooling systems of nuclear power plants in France, Professor Kromp said that because past climactic conditions for cooling had so altered, it should no longer be possible for licenses to be extended based upon procedures relating to situations that no longer existed.

The agenda for the second day turned to the issue of nuclear waste. At a well-attended press conference held to highlight and condemn initiatives from both the IAEA and the EU on high-level waste (HLW). The coalition (Nuclear Waste Watch, an NGO coalition for transparency and participation in nuclear waste management, to which the Institute belongs) criticized both institutions for proposals that could see waste dumps – in the case of IAEA an international repository and for the EU "regional repositories" – located in Siberia, warning against the huge risks either scheme would pose to the environment and the risk of proliferation that would result from increased international shipments of highly radioactive materials. To date 50 NGOs have signed a resolution against these, or in fact any other, plans to export nuclear waste from the country of origin. The resolution can be found at http://www.nuclear-waste-watch.org/resolution.htm.

Antonia Wenisch from the Austrian Institute for Applied Ecology said, "It is absurd to think that transports through the whole of Europe to Siberia would be a measure against proliferation". While Petr Holub from Hnuti DUHA (Friends of the Earth Czech Republic) noted that "The plans to set up and international nuclear waste site in Russia is a cynical attempt to solve the biggest problem of the nuclear industry at the cost of environmental and public health in Russia".

Marcus Meissner and Antonia Wenisch from the Austrian Institute for Applied Ecology gave the final two presentations of the workshop.

Marcus's presentation was on nuclear waste research in the EU context and provided an overview on how waste research is financed by Euratom – specifically the SAPPIERR project, which looks at the possibilities of shared HLW repositories to be used by several countries. In common with the IAEA's proposal, the Multinational Approach (MNA), the EU scheme has also just one offer to host the waste – Russia.

For 2002-2006, EUR90 million (US$108 million) has been allocated for waste management research. This has mostly been focused on the feasibility of deep geological repositories and transmutation – a new concept with processes similar to that of chemical reprocessing and is as yet a theoretical possibility. His presentation can be found at hyperlink "http://www.nuclear-waste watch.org/files/ factsheet_euratom.pdf" http:// www.nuclear-waste watch.org/files/ factsheet_euratom.pdf.

Antonia Wenisch talked about the IAEA's promotion of an international final waste repository, which would relieve states, and the industry, of the problem of how to deal with high-level waste, thus far considered the biggest issue standing in the way of new nuclear power plants.

This year, the IAEA reintroduced the prospect of so-called 'fuels banks' that would allow countries to "lease fuel" – enriched uranium would be procured from Russia, the EU or wherever and the spent fuel could be returned to the same country – which would be the perfect solution to the stalemate that exists with countries like Iran who nobody (read U.S. and cronies) trusts to enrich their own uranium.

There are many valid arguments against the idea proposed by IAEA, not least that the likely host country – Russia – already has a poor reputation for looking after its own waste but then there is also the increased risks that would be posed by the transportation of fuel across Europe to Russia, not to mention the fact that Siberians have no say in the matter and would be forced to live with the legacy of nuclear waste from rich countries who prefer not to defecate on their own doorsteps, so to speak. For the full presentation visit hyperlink "http://www.nuclear-waste-watch.org/files/ factsheet_IAEA.pdf" http:// www.nuclear-waste-watch.org/files/ factsheet_IAEA.pdf

The final day of the workshop was devoted to working groups on four topics – PLEX, Euratom, nuclear waste and common strategies for campaigning – and to the adoption of a common statement on the international campaign against export of European nuclear waste to Siberia.

Sources: Nuclear Waste Watch press release, September 29, 2005; "Problems and Risks of PLEX", presentation by Dr. Helmut Hirsch, September 28, 2005; Energia Klub Hungary, fact sheet on PAKS NPP lifetime extension; "European Nuclear Waste to Siberia?" and "IAEA Nuclear Waste Policies at a Turning Point", Austrian Institute of Applied Ecology fact sheets, September 29, 2005

Contact: WISE Amsterdam

IN BRIEF

Chernobyl + 20. A three-day conference, organized by NIRS and WISE, was held at the end of September in Kiev, Ukraine to coordinate discussions and start preparations for joint activities to observe the 20th anniversary of the Chernobyl disaster.

More than 40 people from organizations all around the world discussed the current situation, organized responses to the much criticized IAEA/WHO report on Chernobyl and made plans for April next year. Strong emphasis was placed upon ensuring the involvement of, and gathering input from, Ukrainian NGO's working on nuclear energy issues as all present rightly agreed that a leading role in the decision making on commemorative activities should be taken by organizations representing those communities most directly affected by the catastrophe. The agreements and plans made will be outlined in the next *Nuclear Monitor*.
WISE Amsterdam

Did earthquake hit Pakistan's nuclear facilities? According to the Pakistani government not, but that is only to be expected... Although Kahuta, the site of the Khan Research Laboratories, is in the midst of the badly hit area near Islamabad, the government issued a statement claiming that the facility is physically secure.

Kahuta is the location of Pakistan's main nuclear weapons laboratory as well as an emerging center for long-range missile development, the primary Pakistani fissile-material production facility employing gas centrifuge enrichment technology to produce Highly Enriched Uranium [HEU]. This facility is not under International Atomic Energy Agency safeguards.

Chinese assistance in the development of gas centrifuges at Kahuta was indicated by the presence of Chinese technicians at the facility in the early 1980s. The uranium enrichment facility began operating in 1984 but suffered serious start up problems. Kahuta began producing HEU in 1986, and Pakistan's fabrication of weapons may have begun soon after, with

the HEU hexafluoride being converted into uranium metal that was in turn machined into weapon pits. Operating at full capacity, Kahuta is estimated to have the potential to produce enough weapons-grade uranium for as many as 3 to 6 weapons each year. But the gas centrifuge plant has been plagued by chronic delays. As of 1984 there were reportedly approximately 1,000 centrifuges operating at the facility. By 1991 about 3000 machines were thought to be operating with a production capacity of 30-50 kg U-235/year, enough for 2-3 implosion weapons a year.

"There is no danger to our nuclear installations and weapons from the earthquake," military spokesman Maj. Gen. Shaukat Sultan told reporters. "They are fully safe," said Sultan, adding he was not immediately able to say up to what intensity the Pakistani nuclear facilities could withstand earthquakes and aftershocks.

The quake caused massive structural damage in the North West Frontier Province and Pakistani Kashmir, wiping out whole villages and laying waste to some 70 percent of Muzaffarabad city.

Pervez Hoodbhoy, professor of physics at Islamabad's Quaid-i-Azam University, said the quake posed more danger to nuclear power plants than nuclear weapons. He also expressed his fear over the situation at the pressurized water reactor-type nuclear power plant at Chashma. "The plant is in a seismic zone and if an earthquake is centered close to it (the power plant) there could be loss of radioactive material and a Chernobyl-like situation," Hoodbhoy said.
Kahuta website, www.krl.com.pk; South Asians Against Nuke by email, October 11, 2005

IEA: Spain has to reconsider phase out. According to *Nuclear Engineering International* Spain is being urged by the International Energy Agency (IEA) to reconsider its decision to phase out nuclear power. The IEA is concerned that the elimination of nuclear energy could have a significant negative impact on economic growth and environmental protection following a pledge by the Socialist government to phase out nuclear energy. Spain's demand for energy has grown rapidly and shows no sign of abating and "from a security of supply perspective, it is important that the government develops an analysis of the possible consequences of a nuclear phase-out," said Claude Mandil, executive director of the IEA.

Spain's socialist government is openly opposed to the nuclear power option. President Jose Luis Zapatero promised in his successful 2004 election manifesto that, if elected, he would phase out nuclear. In a 2004 nationwide poll, only 16% of those surveyed wanted nuclear power on principle, with 59% against and 25% undecided. Spain leads the world in wind power and normally maintains abundant reserves of hydro. With 2004/2005 being one of the worst hydro years on record, Spain's hydropower reserves and output have slumped, while oil and gas prices have soared.
***Nuclear Engineering International* news, October 12, 2005; Platts, October 5, 2005**

Ukrainian authorities retrieve stolen Chernobyl material. Radioactive material believed to have been stolen from Chernobyl a decade ago has been retrieved said according to an official on September 28. A plastic bag containing 14 pieces of nuclear fuel was found during a routine search of the reactor's perimeter by security officials. Spokesman for the plant, Stanislav Shektela said the radioactive material was "probably missing since 1995" when a group of people were arrested and convicted of stealing nuclear fuel from the destroyed reactor's central hall.

In other news, the Ukrainian Ministry for Emergency Situations launched a tender offering Ukrainian companies the opportunity to take over the recycling of scrap metal originating from the 20 mile exclusion zone around Chernobyl for re-use. The potential contractors would be expected to provide secure laboratories and permanent control of the radioactive materials during the recycling process.
***The Kiev Post*, September 29, 2005**

Secret report on Sellafield blunders. An internal report seen by *The Independent on Sunday* reveals a devastating "catalogue of dubious practices"; including sabotage and safety measures based on "guesswork" at the Sellafield waste vitrification plant (WVP) treating Britain's most dangerous nuclear waste. The revelations come at a time when the UK government and nuclear industry are pressing for new plants to be built in the UK. According to the report, an inspection of drums filled with radioactive waste found that a third was not safe to be returned to customers for disposal. BNFL, which runs the plant, is seeking to sell off most of its remaining business, including the waste treatment plant.
***The Independent*, October 4, 2005**

U.S. to establish international 'fuel reserve'. The U.S. Department of Energy is to contribute 17.4 tonnes of high-enriched uranium

(HEU) to an international reserve that would be available in event of supply disruptions. The HEU would be blended down to low-enriched uranium for fuel under IAEA verification. U.S. Energy Secretary Samuel Bodman told the IAEA's general conference in Vienna on September 26 that the reserve was a follow-on to President Bush's February 2004 call for 'reliable access at reasonable cost to fuel for civilian reactors' for nations that forgo enrichment and reprocessing. Russia has agreed to join the scheme.

Nucleonics Week, September 29, 2005

Security lapses at U.S. reactors. A four-month *ABC News* investigation has discovered gaping security holes at nuclear research reactors operating on 25 college campuses across the United States. Among the findings were unmanned guard booths, unlocked building doors, guided tours that provided easy access to control rooms and reactor pools holding radioactive waste and at one location, a guard who appeared to be asleep. A spokesman for the Nuclear Regulatory Commission (NRC), which oversees the country's campus research reactors, said that an investigation has been opened into at least two of the colleges based on the news agency's findings. Critics in Congress have said that the findings reveal another area where the NRC has been slow to respond to potential terrorist threats. "The security problems exposed here offer yet more evidence that, four years after 9/11, the NRC has not done nearly enough to secure our nation's nuclear facilities," said Rep. Edward Markey, D-Mass., a senior member of the House Energy and Commerce Committee, which oversees NRC.

ABC News, October 12, 2005

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@main.nc.us

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

WISE Austria
c/o Plattform gegen Atomgefahr
Mathilde Halla
Landstrasse 31
4020 Linz
Austria
Tel: +43 732 774275; +43 664 2416806
Fax: +43 732 785602
Email: post@atomstopp.at
Web: www.atomstopp.com

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

WISE India
c/o SACCER
42/27 Esankai Mani Veethy
Prakkai Road Jn.
Nagercoil 629 002, Tamil Nadu
India
Tel: +91 4652 240657 / 253295
Email: drspudayakumar@yahoo.com; spuk@vsnl.net

WISE Japan
P.O. Box 1, Konan Post Office
Hiroshima City 739-1491
Japan

WISE Russia
P.O. Box 1477
236000 Kaliningrad
Russia
Tel/fax: +7 95 2784642
Email: ecodefense@online.ru
Web: www.antiatom.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 Africa
c/o Earthlife Africa Cape Town
Liz Mc Daid
P.O. Box 176
Observatory, 7935
Cape Town
Tel:+27-21-683-5182
Email: liziwe@mweb.co.za
Web: www.earthlife-ct.org.za

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
c/o FMKK

WISE Ukraine
P.O. Box 73
Rivne-33023
Ukraine
Tel/fax: +380 362 237024
Email: ecoclub@ukrwest.net
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

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

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

Receiving the WISE/NIRS Nuclear Monitor

US and Canada based readers should contact NIRS for details of how to receive the *Nuclear Monitor* (address see page 11). Others receive the *Nuclear Monitor* through WISE Amsterdam. For individuals and NGOs we ask a minimum annual donation of 50 Euros (20 Euros for the email version). Institutions and industry should contact us for details of subscription prices.

PRINTED MATTER
MATIERE IMPRIME

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

PRIORITY
PRIORITAIRE