

NUCLEAR MONITOR

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GERMANY: LEUKEMIA STUDY COMMISSION BREAKS UP OVER CONCEALMENT CLAIMS

The occurrence of leukemia in children near the German Geesthacht/Krümmel installations is found to be three times higher than expected. Recently, the chairman and the several members of the study commission resigned in protest against alleged concealment by responsible state authorities. In the September 2004 concluding statement, the commission confirmed the suspicion of radioactive contamination apparently caused by nuclear experiments.

(619.5652) WISE Amsterdam – The chairman and five scientific members of the commission resigned claiming that the authorities of the state of Schleswig-Holstein had concealed evidence. Chairman Professor Dr. Otmar Wassermann told the media, on 1 November, that the group did not believe the state government was really willing to seek clarification on the causes of the leukemia cases.

The Schleswig-Holstein Ministry of Social Affairs established the eight-member commission in 1992, although it was also responsible for supervision on nuclear installations, following the discovery of increased incidences in childhood leukemia near the Geesthacht and Krümmel installations. (See also *WISE News Communiqué* 487: "German leukemia commission: Krümmel NPP cause of high leukemia

rate"). After the unexpectedly rapid increase in 1990, archives of the cancer registry for German children shows that the number of childhood leukemia cases has increased threefold, especially for those within five kilometers of Krümmel NPP. Since 1995, new cases have only been discovered among children younger than five years old. The state has spent 4.5 million Euro (US\$ 5.7 million) funding studies and projects on the issue.

In the concluding statement, the commission chairman and resigned members concluded that Krümmel NPP could be one of the causes of leukemia because of a number of inexplicable incidents and local climate conditions. It is also believed that secret nuclear experiments are linked to the contamination and leukemia.

Commission members and a number of scientific study groups have supported this theory, in particular by the four-member Study Group Physical Analysis and Measurement Technique (ARGE PhAM).

Wassermann and other commission members consider the suspicion of radioactive contamination with fissionable material (enriched uranium and thorium), fission products and activation substances (plutonium and americium) to be proven. The elements were found in small airborne particles (see also *WISE News Communiqué* 568.5406: "Hanau, the particles mystery and illegal dumping in Sweden"). ARGE PhAM claims that these small particles are linked to nuclear experiments for combined nuclear fusion and fission energy.

Another possible cause of the radioactive release is said to be a fire on a piece of land between Krümmel and Geesthacht in September 1986. The date of this fire coincides with the increase in leukemia and during the fire, military personnel were observed using measuring equipment and wearing full protective suits. Unfortunately, it is no longer possible to discover all the circumstances related to the fire. Its location, which is outside the boundaries of the

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nuclear facilities, is fenced off and at one point even housed a building. In addition, a fire at the local fire station in 1991 destroyed all documentation on the 1986 accident, making further investigation impossible.

In September 1986, an observed increase in air radioactivity near both installations was explained by the authorities as being caused by (natural) radon accumulating under local climate conditions. The commission considered this to be unlikely further supporting the theory that the 1986 fire was a possible cause of the increased radiation. Such radon accumulations are negligible in the north German lowlands.

The resigned commission members have expressed regret that it took so long time for the current knowledge status to be reached and accuse state and federal authorities of obstructing

the commission's work. One of the difficulties was that the state authority for nuclear installations (Reactor Safety Division of the ministry of Finance and Energy) had also been the contact point for the commission. The state authority denied irregularities by nuclear operators and its own defective past controls but the commission members accused it of having constructed evidence to support this.

The appointment of Dr. W. Wolter to a special state-sponsored study brought the situation to a climax. Wolter had been a high-level official in the Reactor Safety Division and was in a position of responsibility when Krümmel NPP was constructed and during the years of rapid leukemia increases.

As an "independent" researcher he was requested by the state government to prepare arguments to counter the commission's findings. In fact, Wolter was

mandated to make judgments on the work he himself had done in the past!

The obstruction of the state authorities was however compensated by support of non-governmental groups, such as the German section of the International Physicians for the Protection against a Nuclear War (IPPNW) and the Citizens Initiative against Leukemia in the Elbmarsch region. These groups had made financial resources available for independent radiation research over the past years.

Sources: concluding statement by Prof. Dr. O. Wassermann (in German), 15 September 2004; *Strahlentelex*, 4 November 2004; Deutsche Welle, 4 November 2004.

Contact: WISE Amsterdam

U.S.: 5 GROUPS SUE DOT AND NRC

Nuclear Information and Resource Service, Sierra Club, Public Citizen, Redwood Alliance and Committee to Bridge the Gap filed suit against the US Department of Transportation (DOT) in US District Court for the Northern District of California and against the US Nuclear Regulatory Commission (NRC) in the US Court of Appeals for the 9th Circuit for adopting regulations that reduce public protection by allowing more radioactivity to move on roads, rails, planes and waterways without regulatory control. The groups are calling for withdrawal of the portions of the rule that exempt and weaken nuclear transport controls and for full environmental impact review.

(619.5653) NIRS - The regulations, recommended by the International Atomic Energy Agency (IAEA), the UN International Civil Aviation Organization (ICAO) and the UN International Maritime Organization

(IMO), exempt various amounts of every radionuclide (all the radioactive forms of each element) from radioactive labeling, tracking, and control. They also allow some nuclear materials to be shipped without any packaging.

recycling or disposal as regular trash. The health impacts of allowing more unregulated nuclear material in transit can only increase.

From a transportation regulatory perspective, there is absolutely no benefit or increase in public protection thus no justification for adopting these exemptions. They are being adopted to provide "flexibility" and save money for the nuclear waste generators and to "harmonize" for the benefit of the international nuclear industry.

There was an exempt concentration level in past nuclear transport regulations (70 becquerels per gram or 2 nanocuries per gram for any individual radionuclide or combination of radionuclides). The

A whole new category of exempt quantities has been adopted—allowing packages (consignments) to be considered not radioactive in transport even if they contain nuclear materials, up to a given amount for each radionuclide.

These exempt amounts happen to be the same as those designated, by IAEA (IAEA Safety Standards Series TSR-1) and Euratom (Euratom Directive 96-29), for release from all regulatory control to be sold for everyday

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new exempt concentration limits, in order to be the same as those IAEA and Euratom want to release for unregulated use, "recycling," or disposal, have been changed, allowing higher exempt concentrations of radioactivity for the majority of the radionuclides listed.

Again, as with the exempt amounts, the motive is clear—make the transportation exemptions the same as those the nuclear industry (and its proponents IAEA and Euratom) are pushing to release, clear, exempt, exclude or otherwise deregulate nuclear power and weapons wastes and materials from regulatory control.

No radioactive labeling, tracking, manifesting or control will be required for shipments and consignments that are radioactive up to the exempt amounts or concentrations. Truck drivers, rail workers, loaders, emergency responders, even postal workers could be routinely exposed to more radioactivity than before without warning. Workers in the transport and shipping industries will get the highest doses but everyone who lives, works and travels along the routes could come into regular contact with unidentified nuclear waste.

DOT admits workers and the public will have more exposure to radioactivity but discounts the dangers of radiation, failing to consider the impacts on those more susceptible to radiation like children, women and those with reduced immunity.

NRC admits the risks might increase but not significantly it claims. The ICRP 2005 draft supports this as exemption and exclusion from

ACTIVITY

Radioactivity is expressed in terms of disintegrations per second. 1 becquerel means one disintegration and thus one emitted alpha- or beta-radiation particle per second. The term curie was mostly used in the past and one curie is equivalent to 37 billion disintegrations per second.

Lena Warrer

Lena Warrer, one of the founding members of the international WISE network, died on 4 November.

Born in Denmark, she lived many years in the southern Swedish city of Malmo, very close to the Barsebäck nuclear power plant but also close to Copenhagen where the anti-Barsebäck opposition was at its strongest. Like many of her generation, Lena joined the anti-nuclear struggle way back in the mid- and late seventies. Popular resistance blocked the introduction of nuclear power in Denmark and following that success, Lena joined international protests against the Barsebäck reactors just 15 km from Copenhagen. And she continued to do so for nearly 20 years, with great knowledge and dedication. She never compromised in her fight against injustice, environmental degradation, female oppression and increasing consumerism.

For many years, Lena was actively involved in the WISE network until the Danish relay (formed by OOA, the national anti-nuclear network and founder of the international WISE network) ceased to exist in 2000. Health problems forced Lena to stop work and her personal struggle against nuclear power.

Lena was already missed as a 'sister in arms', now we will miss her also as a friend.

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regulations but no justification is provided by either for the increased risks.

The transport rule fits into a larger picture of deregulating nuclear waste internationally. Other US federal agencies including the NRC, the Environmental Protection Agency (EPA) and the Departments of Energy and Defense (DOE, DOD) are in various stages of deregulating nuclear wastes and sites over which they have jurisdiction.

European countries are in various stages of adopting the exemptions same exemptions into their official regulations. (For updates in each EU country, see "EUROPEAN COMMISSION Radiation Protection 134, Evaluation of the application of the concepts of exemption and clearance for practices according to title III of Council Directive 96/29/ Euratom of 13 May 1996 in EU Member States.")

Changing the transport regulations makes taking unmarked nuclear loads to unregulated destinations possible once they are cleared by those other agencies.

Another portion of the rule being challenged is the redefinition and reduction in regulatory control over Low Specific Activity I or LSA-I radioactive material. Although the material is still regulated as radioactive, it can be transported with no packaging at levels 30 times the exemption levels.

This appears to open the door for large bulk radioactive materials like soil, rubble and debris from decommissioning or routine operations to be shipped more cheaply putting the public at increased risk of radiation exposure.

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INDIA: THE HAZARDOUS MIX OF A PECULIAR ACT AND PERILOUS ENERGY

The Atomic Energy Act 1962 meant to serve a few specific purposes: enhancing the safety of India's "ordinary citizens"; safeguarding the country's natural resources and talents for its development; and controlling and using atomic energy for the welfare of Indians and for other peaceful uses.

(619.5654) **S. P. Udayakumar** – In reality, this law has failed miserably on all counts. Instead, it is used for several anti-people purposes: to threaten critics of the authoritarian Department of Atomic Energy (DAE); to undermine the democratic fabric of Indian society, and soon to help private profiteers reap rich dividends at the cost of public safety and costs.

Enhancing Safety

Providing the basic regulatory framework for all activities related to the atomic energy program and the use of ionizing radiation in India, Sections 3 (e), (i), (ii) and (iii), 16, 17 and 23 of the Atomic Energy Act of 1962 address safety concerns.

The regulatory body designated by the Central Government is the competent authority for granting, renewing, withdrawing and revoking consents for nuclear facilities. This body also exercises control over nuclear installations and the use of radioactive substances and radiation generating plants outside such installations.

Sections 16 and 17 of the Act refer to the control of radioactive substance and special provisions for safety. Section 23 empowers the regulatory body with administration of the Factories Act 1948, including the enforcement of its provisions, appointment of inspection staff and development of rules in the nuclear installations.

The Central Government appointed the chairman of the Atomic Energy Regulatory Board (AERB) as the 'Competent Authority' to exercise its powers in rules such as Radiation Protection Rules, 1971; Atomic Energy (Working of the Mines, Minerals and Handling of Prescribed Substances) Rules, 1984; Atomic Energy (Safe Disposal of Radioactive Wastes) Rules,

1987; Atomic Energy (Factories) Rules, 1996; and Atomic Energy (Control of Irradiation of Food) Rules, 1996.

As far as radioactive substances are concerned, AERB is empowered to enter any installation and take samples under the Environmental Protection Act, 1986 and to receive information on excess discharge of pollutants under the Environmental Protection (Amendment) Rules, 1987.

Similarly, when it comes to radioactive air pollution and radioactive wastes, the provisions of the Atomic Energy Act, 1962, cover these issues rather than the relevant rules and AERB becomes the authority to enforce directions and procedures as per the Atomic Energy Act, 1962 with respect to radioactive substances under Rules 2(b) and 3 of Manufacture, Storage and Import of Hazardous Chemical Rules (1989) under the Environmental Protection Act, 1986.

This all-powerful AERB with a wide range of functions to lay-down safety standards and frame rules and regulations to carry out its mandate was set up in November 1983. When A. Gopalakrishnan, former AERB chairman (1993-1996), submitted the Safety Issues Report ordering several procedures and corrective actions at Indian nuclear installations, "the BARC management refused outright to comply with [them]" (Frontline, 24 June, 2000).

In fact, in April 2000, Dr. R. Chidambaram, then secretary of DAE, simply removed the AERB's authority to oversee the safety of a large number of critical nuclear installations meant for the weapons program at the Bhabha Atomic Research Centre (BARC). An Internal Safety Committee set up by the BARC director became responsible for ensuring the safety of

the public and the workers from the dangers that could emanate from these facilities. Thus the safety norms and provisions of the Atomic Energy Act 1962 stood seriously compromised.

Safeguarding Natural Resources

The Atomic Energy Bill 1948, which Pandit Jawaharlal Nehru (independent India's first Prime Minister) moved in the Constituent Assembly of India (Legislative) on April 6, 1948, ensured the state control of atomic minerals. Parliament repealed the Atomic Energy Act 1948 by passing the Atomic Energy Act 1962.

The new Act was quite comprehensive on the discovery of uranium or thorium (section 4), mining control or the concentration of substances containing uranium (section 5), disposal of uranium (section 6), power to obtain information regarding materials, plant or processes (section 7), power of entry and inspection (section 8), power to do work for discovering minerals (section 9), compulsory acquisition of rights to work minerals (section 10), compulsory acquisition of prescribed substances, minerals and plants (section 11), compulsory acquisition not sale (section 11-A), compensation in case of compulsory acquisition of a mine (section 12), and the substitution of certain contracts (section 13).

Despite this painstaking coverage of all aspects of uranium and thorium discovery inside India, several private operators are mining the coastal sand in southern Kerala and southern Tamil Nadu indiscriminately. They extract thousands of metric tons of ilmenite, sillimanite, zircon, garnet, and most importantly, monosite that contain thorium, uranium and cerium.

The people of Kanyakumari and

Tirunelveli districts in Tamil Nadu have been agitating against these sand barons whose unscrupulous activities have triggered massive sea-erosion, increased the amount of natural radiation, undermined fishing, and caused havoc in the overall environment.

The enormity of the operation, and the severity of the situation, is so huge that the member of parliament for Nagercoil constituency recently asked DAE officials not to let private operators handle the rare earth that contain atomic minerals and insisted that the Central Government institutions alone process the atomic minerals (Dinamalar, 2 November, 2004). But the Atomic Energy Act 1962 has simply been a paper tiger crouching in front of the big-money business and big-time corruption.

Using Atomic Energy for Indians' Welfare

The Atomic Energy Act 1962 is expected "to provide for the development, control and use of atomic energy for the welfare of the people of India and for other peaceful purposes and for matters connected therewith." The atomic adventurism of May 1998 and the subsequent weaponization hoopla that resulted in the 2002 Kargil war, and the near nuclear annihilation in the subcontinent, speak amply about the contribution of atomic energy "for the welfare of the people of India." The use of atomic energy "for other peaceful purposes" would become clear if one were to investigate the DAE's track record and the humongous amounts of money, time, energies and natural resources it has swallowed over the past fifty years only to spit out a meager 2% electricity of India's total power generation.

Threatening the Critics

One of the chief dangers of Jim Crow legislation is that it can be implemented in violation of the Constitution and international treaty obligations of the concerned country. The Atomic Energy Act 1962 has indeed become a potent weapon for DAE officials to threaten and silence the

opponents and critics and shun any public dissension to their plans and projects.

As a matter of fact, Dr. R. Chidambaram did openly warn anti-nuclear power activists in and around Koodankulam in southern India that the Atomic Energy Act 1962 would be used against those who spread "canards" against the upcoming nuclear power project there. All local Tamil daily newspapers reported this public warning to the advantage of the DAE and there was no opposition to this highhandedness from any quarter.

The Atomic Energy Act 1962 allows arbitrary suppression of all information —patently unconstitutional

Undermining India's Democracy

Section 3 of the Atomic Energy Act 1962 enables the Central Government "to declare as 'restricted information' any information not so far published or otherwise made public" and "to declare as 'prohibited' any area or premises" where "production, treatment, use, application or disposal of atomic energy or of any prescribed substance" is carried out.

Leaping much further, section 18 (restriction on disclosure of information) restrains nuclear information sharing even more stringently. To make matters worse, the Supreme Court ruled in January 2004 that the Central Government had every right to maintain secrecy about nuclear installations and deny public information in the interest of national security, which was paramount. Although the Constitution guarantees Indians the right to information (see Article 19(1)(A)), these are, according to the court, subject to reasonable restrictions in the interest of national security.

Rejecting a petition by the People's Union of Civil Liberties (PUCI) and the Bombay Sarvodaya Mandal for

making public a government report on safety of nuclear installations, submitted by the AERB to the Delhi government in November 1995, the Court ruled that the petitioners were "not entitled" to get the document declared as "secret" by the Union (Central) Government under Section 18 of the Atomic Energy Act 1962.

It is important to note that the petitioners did not ask for any information about India's nuclear arsenal or its storage site or anything like that but expressed a genuine concern that there was not enough safety precautions in nuclear power stations in the country and any accident could have a disastrous affect on human beings, animals, environment and ecology.

The petitioners had moved the Supreme Court after the Bombay High Court had rejected their petition in January 1997. The petitioners had also raised doubt about the safety aspect with regard to disposal of nuclear waste.

The Atomic Energy Act 1962 allows arbitrary suppression of all information —patently unconstitutional, according to V.R. Krishna Iyer, a widely respected legal luminary in India. The DAE is easily one of our most secretive departments and has much to hide: uranium-mining hazards in Jadugoda, excessive irradiation of power-plant workers, waste mismanagement, and numbers regarding explosive yields.

When a former Captain B.K. Subba Rao questioned the DAE's nuclear submarine (Advanced Technology Vessel) project, a spectacular Rs. 2,000 crore failure, he was charged in 1988 with "espionage", with the ludicrous evidence of his IIT-Bombay Ph.D. thesis, and jailed for 20 months—until fully exonerated by three different courts.

Without any transparency, accountability, parliamentary oversight or popular scrutiny and with unlimited funding, 'sacred cow' status, innocuous 'science and technology'

JAIPUR DECLARATION FREE SOUTH ASIA OF NUCLEAR DANGER!

The Second National Convention of the Coalition for Nuclear Disarmament and Peace (CNDP) India was held in Jaipur from 26-28 November 2004, four years after the founding convention and over six years after India and Pakistan first declared themselves nuclear weapons states following nuclear detonations in Pokhran, India, and Chagai, Pakistan.

The delegates, representing various peace movements in India, emphatically reiterated the message of Charter 2000. "Nuclear weapons are means of mass destruction regardless of who wields them. They are weapons of genocide. They can impose horrendous suffering on victims across generations. They can destroy the ecosystem. The damage they do is lasting and incurable. The sheer scale and character of the devastation they can cause makes them a profound and distinctive evil. For this and other reasons, the possession, use, or threat of use of nuclear weapons is absolutely immoral."

The convention also reaffirmed "that the use, threat of use, or possession of, and even preparation for making, nuclear weapons is immoral, illegal and unacceptable under "any circumstances". Also that "nuclear deterrence" is absolutely abhorrent to human sentiments since it implies that a state if required to defend its own existence will act with pitiless disregard for the consequences to its own and its adversary's people."

The statement also expressed with great concern with the undeclared border war and confrontations along the international border and the LoC caused by the destabilising effects of the 1998 nuclear blasts.

The rulers of India and Pakistan, two resource starved countries, remain unwaveringly stuck with their pernicious nuclear weapons

programmes, which are a tragic diversion from vital social needs that must be addressed.

Though no further blasts have occurred since 1998, the race to develop nuclear weapons continues unabated. The possession of nuclear weapons is given a formal status through issuance of highly deplorable nuclear doctrines - based on the spurious and extremely dangerous theory of 'nuclear deterrence'.

West Asia and Northeast Asia have also emerged as nuclear hotspots. The danger of the unchecked spread of nuclear weapons to sundry state, and also non-state, actors through black market transfers of nuclear technology and fissile materials has exponentially escalated over recent years, bringing dangerously closer the prospects of a nuclear holocaust.

Most disturbing of all, the US, the original nuclear sinner, has aggressively taken to vertical proliferation, contemptuously throwing aside all international norms.

Washington has sought to develop mini-nukes for actual battlefield use and continues with Ballistic Missile Defence (BMD) programmes - unilaterally abrogating international treaty obligations yet never receiving international censure. The other nuclear weapons states have also done nothing to denuclearise.

The delegates also recognised, especially in the Indian and South Asian context, that the ideology and politics of paranoia and hatred against the 'other' acts as the major driver for 'nuclear nationalism'.

Full support was pledged to the popular initiatives for better understanding and friendship between India and Pakistan and both governments were called upon to pay serious heed to the popular urgings to

reduce and eliminate the risks of nuclear confrontation.

The 2000 Charter made detailed and specific demands for the immediate halt and eventual reversal of nuclear weaponisation programmes in the region, which have as yet gone unheeded. Both governments are urged to engage in meaningful dialogue to bring about peace and amity, and also address the problems of Jammu & Kashmir.

The year 2005 is profoundly significant being the 60th anniversary of the tragic bombings of Hiroshima and Nagasaki and also the 50th anniversary of the Bandung Conference establishing the Non Alignment Movement calling for global disarmament.

The Jaipur Declaration also called on all peace activists to join the reinvigorated global campaign, for total and complete abolition of all nuclear weapons by 2020, spearheaded by the Mayors for Peace.

The statement concludes with a pledge to carry forward the campaign to free South Asia from the scourge of nuclear threats, as an inalienable and critical component of the global struggle, and committed to launching a massive campaign to educate the people about the dire threat posed by nuclear weapons and rivalry in South Asia.

Please note that this is an edited version. For the complete declaration, please contact SOUTH ASIANS AGAINST NUKES (SAAN) at SAAN_@yahoogroups.com

label, and the 'national security' jingoism, the DAE is an undemocratic and anti-people department. By making it possible for the DAE parivar (family) to keep several 'incidents' and 'accidents' under wraps and to persist with the authoritarian tendencies and practices, the Atomic Energy Act 1962 clearly undermines India's democratic heritage too.

Helping Profiteers

There is an added danger now that the DAE is looking into ways of making amendments in the Atomic Energy Act 1962 in order to have private participation in the future nuclear power programs. Talking to reporters after inaugurating the Reverse Osmosis Plant and participating in the 'Bhoomipooja' for the construction of turbine building and other civil structure at Koodankulam on August 1, 2002, the chairman and managing director (CMD) of Nuclear Power Corporation of India LTD (NPCIL) V. K. Chaturvedi

said that NPCIL's proposal in this regard was under the consideration of the Central Government.

The latest word is that an amendment to the Act is under consideration at various levels. Once the amendment is passed in the Parliament, rich power barons could invest in the nuclear power program and reap high dividends while the Indian state would subsidize nuclear research, enrichment of fuels, disposal of nuclear wastes, decommissioning of plants etc. with public funds.

Thus the Atomic Energy Act 1962 would facilitate the fusion of secretive state, careerist DAE and greedy capitalists for private profit and the fission of Indian citizens' safety, health and futures for several generations to come. All this should not be surprising to us after all. As is the department, so is the law. Instead of getting its act together, it gets into wrong Acts.

Laws generally come from religion with clear notions of right and wrong, traditional customs and practices, and from the lawmakers. In the globalized world, laws also sneak in from corporate boardrooms, technocratic conclaves and other such caucuses of capitalist coolies.

Knowing how to read and reinterpret these laws and to recover the human agency is a very crucial aspect of being a citizen of a democracy today. In that spirit, every Indian should be aware of the Atomic Energy Act 1962.

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MORE WARNINGS ON PROPOSED WEAKENING OF RADIATION PROTECTION

This second in NIRS' series on radiation impacts describes the International Commission on Radiological Protection's proposal, ICRP-2005, (1) to increase radically the allowable doses during and after radiological accidents or attacks; (2) ICRP's failure to improve nuclear worker doses; and (3) ICRP's failure to incorporate important recent research on low-level radiation health effects.

(619.5655) NIRS - In the 11 November 2004 *Nuclear Monitor*, readers were alerted to draft ICRP-2005 recommendations open for public comment until the end of December 2004. All comments must be submitted via the ICRP website at <http://www.icrp.org/remissvar/remissvar.asp>

If terrorists do attack? Or another bad reactor accident occurs? Or a load of radwaste crashes?

Some day another major nuclear reactor accident may occur, or terrorist detonation of a "dirty bomb" or other radiological device, causing widespread radiation contamination. ICRP should urge prompt evacuations and complete decontamination, but instead proposes to allow huge increases in radiation doses. ICRP will allow an annual dose of 100 milliSievert (mSv) or 10 rem (10,000

millirem or mrem) per year. (1 mSv = 100 millirem; 1 Sv = 100 rem.)

How dirty is clean enough? Why use "Standard Man"? Why not add up doses from all sources?

A reactor or bomb emergency would affect large areas that would be expensive to decontaminate. Therefore, ICRP uses a cost-benefit analysis to compare costs of cleanup with its own estimates of adverse health and genetic effects and fatalities. If regulators require cheaper partial cleanup, residents would return to live with residual radiation.

In the post-event 30-year span that ICRP assumes, a total individual dose could reach 300 rem (300,000 mrem /3 mSv), which is estimated as equivalent to roughly 50,000 chest x-rays. It is officially estimated that **one in four** of

people exposed would develop cancer from such exposures.

Doses in the range of 400-600 rem may be lethal to one-half of those exposed ("LD-50"). Non-lethal health effects may be expected from a 300-rem cumulative exposure. Nonetheless, after the Chernobyl accident in 1986, international agencies adopted an ungrounded assumption that, unless public radiation exposures exceed 100 mSv (10 rem), there is no presumption of need for site decontamination. To the contrary, full decontamination should be required. ICRP should withdraw its 100 mSv/yr (10 rem) allowable dose proposal. Preventing attacks and accidents should be the regulatory priority.

Below, ICRP Table S1 summarizes "Maximum Dose Constraints for

Workers and Public from Single Dominant Sources for All Types of Exposure Situations that Can Be Controlled," given in annual maximum effective doses in rem and mSv.

— 10 rem (100 mSv) — Allowable in emergencies, and for emergency workers, public evacuation and relocation, high levels of controllable existing exposures. No societal or individual benefits above this constraint level.

— 2 rem (20 mSv) — Applies to occupational exposures, sheltering, iodine prophylaxis during accidents, controllable existing exposures (radon), comforters and caregivers for irradiated patients. Assumes information, training, and monitoring.

— 0.1 rem, or 100 mrem (1 mSv) — For situations deemed to have societal benefit but none for the individual recipient, without information, training, or dose assessment in normal situations

— 0.001 rem, or 1 mrem (0.01 mSv) — Minimum value of any constraint threshold exclusion level below which no regulation may be required. No individual or societal benefits to regulating below this level, according to ICRP.

How much radiation is too much? More protection is needed, not less.

Previously, we criticized ICRP for proposing a "trivial" threshold dose; a fraction of background radiation that ICRP claims needs no regulation. By "excluding" and "exempting" low-level radioactive materials and wastes from control, ICRP is supporting deregulation of radioactive wastes generated by nuclear power, weapons, and other atomic activities.

This is a major step backward from ICRP's 1990 conclusion that the amount of natural radiation we receive "provides no justification for reducing the attention paid to smaller, but more readily controlled, exposures to artificial sources." Instead of deregulation, the many technologically produced radiation sources now in the

environment need to be brought under control.

Here we also challenge ICRP's failure to recommend greater protection for nuclear workers, as well as the public, from exposures to single and multiple sources of human-generated ionizing radioactivity. Dose numbers are expressions of biologic damage to tissue, not easily verified or enforced, they serve as a design basis to permit nuclear facilities to release radiation that gives doses which are in addition to natural background sources.

National regulations are usually based on a combination of ICRP recommendations and the nuclear industry's powerful influence, permitting routine releases and exposures to workers and the public. These doses may not be accurately estimated or measured.

As for occupational exposures, ICRP-2005 fails to reduce permissible worker dose limits, despite old and new evidence that exposures are too high. The British National Radiological Protection Board (NRPB) criticized the 1990 ICRP recommendations for failing to reduce worker doses and public limits at that time.

ICRP could be underestimating radiation risks for some internal emitters by two to three orders of magnitude.

ICRP-60 did recommend lowering worker doses from an average of 5 rem (50 mSv) per year to an average of 2 rem/yr (20 mSv), whereas NRPB in 1987 had called for reduction of worker exposures to 1.25 rem/yr (12.5 mSv). ICRP has not done so. The U.S. had adopted neither NRPB nor ICRP recommendations to reduce worker doses, despite more than a decade of research indicating the need for stricter standards.

The more learned about radiation impacts, the better the protection needed

Scientific epidemiological studies of radiation and health often find increases of cancer in areas contaminated by radiation, but many conclude that doses were too low to cause the diseases manifest in the exposed populations. Recent microbiological research results are suggesting that doses from internal emitters may have been underestimated. A British Committee Examining Radiation Risks of Internal Emitters (CERRIE) was formed to investigate this apparent and pervasive discrepancy. The report examines disease increases in many communities, including leukemia cases near the UK Sellafield reprocessing facility.

Although the committee was charged to reach consensus whenever possible and clearly outline spheres of disagreement, rifts were evidently too great and resulted in a dissenting report by some committee members. The dissenting report concludes that the ICRP risk model, based on atomic bomb survivor data, under-represents damage inflicted by chronic exposure to internal radiation emitters. While refusing to rule out other non-radiation explanations for the incidence of diseases, the final report of the full CERRIE committee does conclude that some ICRP risk models for some radionuclides may underestimate risk.

In reaching their conclusions, both the committee and the dissenters (who are also listed as members in the final report) examined both epidemiological and biological studies. The CERRIE Report identifies some ICRP risk model problems.

The dissenters' minority report says that ICRP could be underestimating radiation risks for some internal emitters by two to three orders of magnitude. ICRP does not adequately account for evidence of the research findings of a bystander effect, genomic instability, or certain kinds of cellular mutations called "minisatellite."

Dissenters further conclude the likelihood of this underestimation

requires that the Precautionary Principle be exercised in the use of nuclear technologies. More on these studies and reports and their significance for radiation protection will be described in future issues of the *Nuclear Monitor*.

Conclusions for commenting to ICRP and national officials; NIRS urges ICRP to

1. Reject any increases in allowable doses to workers or public; instead, lower permissible doses. Recognize that these doses may not be sufficiently protective for some individuals.
2. Prohibit deregulation of nuclear materials, wastes and activities. Reject "exclusions" and "exemptions" for manmade radioactive materials and practices. Reject use of a "safe threshold" to deregulate nuclear materials or wastes.

US Congress stops new nukes! Bush administration plans to research the development of new nuclear weapons (such as "bunker busters" and "mini-nukes") in clear violation of the country's NPT obligations were scuppered on 20 November when Congress voted to deny the request for funding. Congress also cut the requested funds for a new facility to build plutonium pits from US\$29.8 million to US\$7 million. This is a major victory for nuclear disarmament. Senators have warned against attempts to revive the funding in the fiscal 2006 budget to be submitted to Congress in January suggesting that it would receive the same response.

Washington Post, 23 November 2004; Nuclear Age Peace Foundation, 24 November 2004

WISE Russia sues over referendum. After being denied the opportunity of organising an anti-nuclear referendum in Voronezh, Russia recently, environmental group Ecodefense (WISE Russia) had its first court hearing on 22 November to question

3. Take into account increased risks found in recent research on low-level radiation impacts, including bystander effect and genomic instability.

4. Recognize the greater damage associated with internal emitters, including the greater biological effectiveness of alpha emitters. Account fully for organ impacts from inhalation and ingestion.

5. Replace "Standard (or "Reference") Man" or "Most Exposed Individual" with "most sensitive members" of potentially exposed populations in calculations and regulations.

6. Expand consideration of radiation impacts to include all deleterious effects, not just fatal cancers and gross genetic effects.

7. In calculating doses and risks to individuals, include all sources of exposure ("routine" and accidental

releases from reactors, industrial, medical and military facilities, "recycled" wastes in consumer products, etc.)

8. Support NIRS nominations to ICRP's new Committee #5 on non-human environmental exposures Drs. Judith Johnsrud and Dennis Nelson to represent U.S. stakeholders. (This final recommendation, not all the comments on ICRP 2005, can be made directly to Dr R. Jan Pentreath, Chairman ICRP Committee 5, pentreath@supanet.com.)

This article is the second in a series by NIRS on radiation standards

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IN BRIEF

the decision. The local parliament and election commission had also rejected an appeal on the local referendum, so Ecodefense applied to the local court to question the legality of that decision. The court subsequently decided to call for members of parliament to attend the next hearing, which will occur on 8 December.

Ecodefense by email, 24 November 2004

South African nuclear workers complain of illnesses. A toxicologist will study the medical records of 23 current and former Nuclear Energy Corporation of South Africa (Necsa) employees to determine their state of health. Earthlife Africa said on 1 December. The organization expressed concerns of "irregularities" in the way in which workers' medical files were handled. This comes after a former Koeberg worker contracted leukemia.

The Guardian online, 2 December 2004

Chernobyl caused cancers in Sweden. A new study by Swedish scientists'

claims that there is statistical evidence to show that Chernobyl did cause more cancer in the north of the country. Heavy rains following the accident caused a relatively large amount of radioactive emissions to fall mainly in the north. Although the study was completed in 2000, it is only now being published in the British Medical Association's Journal of Epidemiology and Community Health because science editors had been sceptical.

www.studyinsweden.se, 19 November 2004; BBC News on-line, 20 November 2004

Libya complains of poor rewards for nuclear disarmament. Colonel Gaddafi has said that there are no incentives for other countries to follow Libya in renouncing nuclear, chemical and biological weapons because the country has not benefited from its new stance. French newspaper Le Figaro reports the Libyan leader's disappointment at not being given more security guarantees and suggested that countries like the Democratic People's Republic of Korea

(DPRK) and Iran would not dismantle similar programs without being guaranteed "peaceful technology" in return.

www.cnn.com, 24 November 2004

EC investigates UK NDA. The European Commission is expected to begin an investigation into the UK government's Nuclear Decommissioning Authority (NDA) expected to begin operations in April 2005. The EC will be checking to see if rules on state aid were breached and the probe could take up to 18 months to complete. Environmental groups in the UK have long objected to the creation of the NDA and argue that the body will perpetuate the problem of nuclear waste instead of solving it. Greenpeace said "...the NDA is in fact a front that would be used to channel more funding into an industry which is environmentally damaging and not economically viable.

The Times & the Financial Times, 18 November 2004

EU: ITER even without Japan. The European Union adopted a mandate on 26 November to build the International Thermonuclear Experimental Reactor (ITER) for fusion research in Cadarache, France. The six international partners have been struggling over the construction site for years and now the Council of EU ministers no longer rule out starting the project with fewer than six partners. The EU is anticipating the possible break-up of the six-party talks.

Nucleonics Week, 2 December 2004

Russian environmentalists demand access to nuclear plants. Members of Russian Ecodefense (WISE Russia) are calling on the head of nuclear power operator Rosatom to allow representatives of public and environmental organizations into nuclear power stations to independently monitor radiation. Ecodefense deputy chairman Vladimir Sliviyak said such monitoring must be allowed to avoid public misinformation such as which occurred on 4 November after an

accident at the Balakovo nuclear plant which led to mass panic.

Ekho Moskvyy Radio, Moscow, 9 November 2004

NGO's lose court case on Bulgarian nuclear plant. The administrative court in Sofia, Bulgaria, on 15 November dismissed claims by Friends of the Earth Bulgaria, WISE and Greenpeace that a government decision taken last summer to build the Belene nuclear plant infringed on several planning laws and the Espoo convention. The court supported the Bulgarian government's claim a declaration of intent had mistakenly been seen as a decision before one had actually been taken. The NGO's claimed that the decision infringed on their rights to participate in the Environmental Impact Assessment. Jan Haverkamp, representing both WISE and Greenpeace, said the fact that no official decision had been taken, was a victory. **Jan Haverkamp & Bankwatch by email, 15 November 2004**

Worldwide protest against Rokkasho Reprocessing Plant. Over 120 organizations and individuals around the world have joined the campaign against testing and operating of the Rokkasho Reprocessing Plant in Japanese Aomori Prefecture. In an open letter sent to the government, local municipalities, utilities and the media in Japan, the signatories demand that the government and local leaders reconsider Japan's plutonium program and make the wisest, most courageous decision not to start up the reprocessing plant, which would be a menace to the world. Contact Satomi Oba at WISE Japan (kota-goldencat@kfa.biglobe.ne.jp) for details.

WISE Japan, 1 December 2004

Finland to sabotage EU efforts on climate change. Greenpeace and Friends of the Earth Finland have received a leaked EU Council draft document showing that Finland seeks to sabotage European targets on climate change. The leaked draft shows that Finland actively opposes concrete

targets on preventing dangerous levels of climate change. Finland justifies its position on the grounds that explicit targets for industrialized countries would make coming climate negotiations with, for example the U.S., harder, said Greenpeace energy campaigner Kaisa Kosonen. The Council draft recognizes the scientific fact that to avoid catastrophic climate change, global greenhouse emissions must be cut by 50% from 1990 levels by 2050. Finland, according to the draft, opposes the 60 to 80% reduction target suggested for developed countries.

Greenpeace Finland & Friends of the Earth Finland press release, 25 November 2004

Demonstrations in Italy against Slovenian plant. Amici della Terra (Friends of the Earth) and the Greens held demonstrations in Trieste in order to raise public awareness on the problems of the nuclear plant off Krsko in Slovenia. Sit ins in front of the Slovenian Consulate and the Trieste Prefecture have been held to urge Italian and Slovenian authorities to inform the population on the risk of nuclear accidents and the related consequences. According to Amici della Terra, the main problem of Krsko is that its safety standards are not up to European requirements and the fact that it is sited in a highly seismic area and could not resist an earthquake measuring 6 on the Richter scale.

Amici della Terra, Rome, 29 November 2004

Cracked reactors may force closure of U.K. nuclear plants. British Energy could be forced to close some of its ageing nuclear generators due to cracking inside the core reactors. The problems cover all eight of the company's advanced gas cooled gas reactors, or AGR's. Hartlepool and Heysham 1 power stations are already closed for repairs following a range of difficulties and British Energy admits it needs to spend ú250 million a year to bring others up to scratch. But the more critical problems are centered on the splitting of graphite bricks used to "slow" the speed of neutrons in the

AGR equipment. According to an independent consulting engineer who specializes in the nuclear sector, graphite cracking has become a serious issue in the nuclear sector.

The Guardian, 2 December 2004

Sweden: Barsebäck-2 to be closed on 31 May 2005.

The Swedish government has announced that the Barsebäck-2 reactor must be definitely closed by that date. It informed the management and employees of the decision.

WNA News Briefing, 24-30 November 2004

U.S. coalition wins access to safety hearing uprates.

On November 22, 2004 an Atomic Safety and Licensing Board with the U.S. Nuclear Regulatory Commission granted "standing" to the

Brattleboro, Vermont-based New England Coalition and the State of Vermont on four safety contentions legally challenging an effort to boost electric power by 20% at the aging Vermont Yankee nuclear power station operated by Louisiana-based Entergy Nuclear. The intervention represents an unprecedented hearing after more than 100 successful industry "power uprates" across the United States. (See also WISE/NIRS Nuclear Monitor 610.5609 "Power Uprates: Boosting Megawatts and Accident Risk,")

The State of Vermont was granted a hearing on contentions that the 32-year old reactor's redesign to boost its electrical output by 100 megawatts made some safety systems unreliable in the event of an accident.

Additionally the state focused concern on the power company's containment pressure calculations in the event of an

accident. New England Coalition granted concerns regard the seismic integrity of the nuclear station's wooden cooling towers and an argument that the General Electric Boiling Water Reactor should be required to evaluate the safety significance of power transients as part of the technical review of the power boost. For more on Power Uprates visit the New England coalition website at <http://www.necnp.org/main.php>
NIRS, 30 November 2004

Russia: Kalinin-3 reached criticality.

The Kalinin-3 reactor, a 950 MW VVER-1000 unit reached its first criticality on 26 November.

WNA News Briefing, 24-30 November 2004

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THE NUCLEAR MONITOR

The Nuclear Information & Resource Service was founded in 1978 and is based in Washington, DC. The World Information Service on Energy was set up the same year and is housed 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.

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