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MONITORED THIS ISSUE:

UTAH WILDERNESS VICTORY HINDERS RADIOACTIVE WASTE DUMP

On January 6, George W. Bush signed into law the Fiscal Year 2007 Defense Authorization Bill, including a provision creating the Cedar Mountains Wilderness Area in Utah. This effectively blocks the preferred route for a 30-mile-long railway extension required by Private Fuel Storage, LLC (PFS) to deliver commercial high-level radioactive wastes by train to the Skull Valley Goshutes Indian Reservation.

(641.5743) NIRS - Although PFS may still try to dump on the Goshutes - by offloading its proposed four thousand extremely heavy (well over 100 ton) Holtec rail-sized casks near the reservation and heavy-haul trucking them to the Indian community on the final leg of the journey - it now faces significant delays and cost escalations. (1)

This represents a major victory in the decades long struggle to stop high-level radioactive waste dumps targeted at Native American lands and communities. This wilderness designation was hard won by an unlikely coalition of Utah Republican congressmen, wilderness, environmental, and anti-nuclear groups, and anti-dump Goshutes.

Utah's U.S. congressional delegation - mostly conservative Republicans who have not allowed such a federal wilderness designation in their state for 20 years - were concerned PFS would threaten the future of Hill Air Force Base and the Utah Test and Training Range (UTTR), one of the biggest and busiest bombing and missile test

ranges in the country, and one of the state's largest employers.

Seven thousand F-16 fighter jets loaded with munitions and ordnance fly over Skull Valley every year. The risk of an accidental crash into PFS was the main controversy in the U.S. Nuclear Regulatory Commission (NRC) licensing proceeding. However, on September 9, 2005, the NRC Commissioners, in a three to one split decision (NRC Commissioner Gregory Jaczko dissented), approved authorizing NRC staff to issue a construction and operating license to PFS. (2) The license has not yet been issued. U.S. Representative Rod Bishop (Republican from Utah) had sponsored the UTTR Protection Bill for several years, culminating in its recent passage.

The Southern Utah Wilderness Alliance (SUWA) spearheaded the non-governmental efforts, aided by national and grassroots environmental allies. (3) An anti-PFS Capitol Hill action day on July 25, 2005 initiated by NIRS board member Susan Alzner laid important groundwork for this wilderness victory. The day included a press conference in

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the U.S. Capitol hosted by U.S. Representative Dennis Kucinich. A Democrat from Ohio, Kucinich in June 2005 sponsored a letter, signed by 62 Congressman, to NRC opposing PFS.

Featured speakers at the press conference included Margene Bullcreek from the Skull Valley Goshutes (founder of OGD, Ohngo Gaudedeh Devia, "Timber Setting Community," which opposes PFS), musicians Ani DiFranco, as well as Amy Ray and Emily Sailers of the Indigo Girls, and actors James Cromwell and Joan MacIntosh. Joined by Lena Knight from Skull Valley Goshutes, Honor the Earth executive director Winona LaDuke, NIRS board chair and head of Sierra Club's Radiation Committee Dr. Judith Johnsrud, staff from Ani DiFranco's concert tour, and representatives from SUWA, NIRS, Public Citizen, U.S. Public Interest Research Group, and Friends of the Earth, teams visited the offices of a dozen U.S. Senators as well as the U.S. Department of the Interior and Bureau of Indian Affairs.

A main request at each meeting was that the Senators support the creation of the Cedar Mountains Wilderness Area. A key meeting was held with the staff of long-time Yucca dump opponent U.S. Senator Harry Reid of Nevada, Democratic Leader. The anti-PFS coalition made clear that either Nevada and Utah hang together or the two states would hang separately when it came to nuclear waste. They urged

Sen. Reid to work with his Utah colleagues to defeat both dumps.

The Utah and Nevada congressional delegations had not been on the best of terms ever since Utah's two Republican Senators, Orrin Hatch and Bob Bennett, voted in favor of the Yucca Mountain dump on July 9, 2002. Nevada Senators Reid and John Ensign (Republican) had long opposed the Cedar Mountains Wilderness, until Utah's delegation changed its position on Yucca. Sen. Bennett did just that after NRC licensed PFS, declaring in a statement on the Senate floor that he now opposed the Yucca dump. Sen. Hatch, however, stuck to his support of the Yucca dump, and instead focused his opposition to PFS on lobbying top Bush Administration officials and nuclear utilities in opposition to PFS. Given Hatch's intransigence, it remained unclear until the last second of the legislative session whether or not the Nevada delegation, especially Sen. Ensign who sits on the Armed Services Committee, would allow the wilderness provision to be included on the Defense Authorization Bill. Sen. Reid, however, helped bridge the divide.

Other behind-closed-doors Capitol Hill negotiations combined with active engagement by Utah's Governor Jon Huntsman, Jr., as well as determined grassroots activism in strategic states, made all the difference to the success of the Cedar Mountains Wilderness Act.

(4) An important element of the breakthrough seems to have been Sen. Hatch's agreement to co-sponsor legislation, introduced by Reid and Ensign and supported by Bennett, to transfer title to commercial irradiated nuclear fuel from utilities to DOE as soon as it is placed in on-site dry cask storage, and to favor wastes remaining where they are for decades to come rather than being transported to Western dumpsites. (5)

In addition to the wilderness block on the radioactive railroad, four of the seven remaining PFS member utilities announced their withdrawal from the consortium in December. Southern Nuclear announced in a letter to Sen. Hatch that it was completely withdrawing from PFS while Entergy, Florida Power and Light, and Xcel announced in letters to the Senator that they would not invest any more money towards PFS, on the significant condition that Yucca or some other solution to the irradiated nuclear fuel dilemma be in place. (6) Sen. Hatch also secured from the Bush Administration's U.S. Bureau of Land Management the re-opening of a public comment period on the issue of transporting high-level radioactive wastes down Skull Valley. (7) This is significant, because despite the wilderness blocking its preferred railway, PFS has not admitted defeat. Instead, PFS is now threatening to heavy-haul truck the over 100 ton rail casks the final 30 miles down the Skull Valley Highway from the Union Pacific Railroad to the Goshutes Reservation. BLM will announce its public comment period in the Federal Register in the near future, and NIRS will send out alerts on how to submit comments.

Although these developments do not mark the outright death of PFS, they do represent significant victories, nails in the coffin of this environmentally racist dump proposal. As U.S. commercial irradiated nuclear fuel policy undergoes a tidal shift in the nightmarish direction of reprocessing, we all must remain vigilant, including against the PFS proposal.

Sources:

- (1) Suzanne Struglinski, "Cedar Mountain OK Dents Nuclear Plans," *Deseret Morning News*,



Jan. 7, 2006; includes a good map showing how the wilderness area will block the proposed railway. See <http://deseretnews.com/dn/view/2/1,4382,635174625,00.html?textfield=nuclear>.

(2) <http://www.nirs.org/ejustice/nativelands/fedrasstatement090905.htm>

(3) See SUWA's declaration of victory, as well as

photos from and a description of the Cedar Mountains Wilderness, at <http://www.suwa.org/>

(4) "Utah Scores in Nuke-Dump Fight," Salt Lake Tribune, December 17, 2005

(5) Suzanne Struglinski, "House, Senate Bills Call for On-Site Nuclear Waste Storage," December 15, 2005

(6) Robert Gehrke, "Nuclear Waste Storage: Four

Companies Hold a 68% Interest in the Project," Salt Lake Tribune, December 21, 2005

(7) Mark Watson, "BLM Seeks Comments on N-Waste Rail Spur," Tooele Transcript Bulletin, December 13, 2005

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ADVISERS CALL FOR WASTE PLAN AS UK SIGNALS NEW BUILD

The UK government's adviser on nuclear waste, Nirex, has urged the Government to formulate a plan to dispose of the country's existing radioactive waste before making plans to build new nuclear plants and creating even more.

(641.5744) **WISE Amsterdam** - The Royal Society, the UK's national science academy, echoed Nirex's call and urged the Government to create a new expert commission to advise on the safe storage of radioactive wastes.

The Committee on Radioactive Waste Management (CoRWM), an independent committee appointed by the Government in 2003, has been charged with the monumental task of reviewing the options and identifying methods for managing radioactive wastes and is due to release its final report in July. These recommendations cannot however be seen as a 'solution'. The published draft of CoRWM's final report states, "If Ministers accept our recommendations, the UK's nuclear waste problem will not be solved. Having a strategy is a start. The real challenge follows." This is possibly one reason why the Royal Society is already calling for a new committee to continue where CoRWM stops.

Latest Count

In October 2005, Nirex released its latest report providing an inventory of the UK's radioactive wastes based on stocks held in April 2004 - this is currently produced every three years. The inventory catalogues waste currently stored and estimates waste still to be created from the operating and decommissioning of existing facilities, assuming that no new plants are to be built.

This latest report shows an increase in low and intermediate level wastes (by

35 and 2 percent respectively) and a decrease of 11 percent in high level waste giving the UK a total of 2.3 million cubic metres of radioactive wastes. According to Nirex, the decrease in the amount of high level waste from the 2001 inventory is due to the reclassification of waste from Dounreay, which has been packaged in concrete drums and as the waste is no longer producing heat (a characteristic of HLW), it has been reclassified as intermediate level waste.

Of the vast total amount of UK wastes, 1,340 cubic metres are made up of high-level waste (HLW), 217,000 cubic metres of intermediate level waste (ILW) and 2.06 million cubic metres of low-level waste (LLW). Although HLW - the most dangerous category of nuclear waste that kills almost instantly following direct exposure - accounts for a relatively small volume of the total amount of wastes, it does account 95 percent of the total radioactivity and is dangerous for thousands of years.

Nirex calculates that 94 percent of existing wastes comes from the reprocessing of spent nuclear fuel. This is a process that the nuclear industry likes to pretend is akin to recycling when in fact, instead of reusing waste products to reduce waste, this process actually creates more waste than originally existed.

Large volumes of land on some nuclear sites is believed to have been contaminated by leakages of radioactive liquids but most of it is still

to be characterized meaning that the total volume of radioactive waste could still increase significantly.

The UK's LLW is stored in underground vaults at the national waste facility at Drigg in Cumbria but there are no facilities for the permanent storage of ILW and HLW and Drigg itself is expected to be full within the next two years. Just 8 percent of all nuclear waste is 'securely stored', the rest is held at 37 temporary sites, 24 of which are coastal and could be at risk from the elements and rising sea levels.

The cost of burying the UK's nuclear waste has been estimated to be potentially as high as 85 billion pounds (nearly US\$152 billion). The Nuclear Decommissioning Authority (NDA) is due to publish new figures and has said that it is "almost certain" that its initial estimate of 56 billion pounds (US\$100 billion) will be revised upwards following closer inspection of conditions at some of the older nuclear sites, Sellafield and Dounreay in particular. In addition, the initial estimate had only taken into account the costs of decommissioning at civil nuclear sites and did not include weapons facilities or privately-owned plants like Sizewell B.

The government-owned company Nirex, recently made independent of the nuclear industry, advocates for the construction of a geological repository for all wastes projected to cost around 7 billion pounds (US\$12.5 billion). An earlier search for a deep repository was dropped in the 1990s amid public

concerns. Any new repository would need to be constructed between 300 metres and 2 kilometres underground and designed to withstand up to one million years of geological change. An incredibly tall order considering that no one can possibly claim to accurately calculate the kind of geological changes that could occur in the next million years.

Secret Waste Dumps

The *Sunday Herald* has reported on a recently launched investigation into the risks posed to public health by secret radioactive waste dumps on the coast of North Ayrshire in Scotland. The newspaper states that thousands of cubic metres of wastes from the Hunterston nuclear power station were dumped in five shoreline pits and left accessible to the public. The pits are located on reclaimed land outside the grounds of Hunterston.

The wastes dumped - around 6500 cubic metres of low-level wastes including contaminated soil, rubble and concrete dumped between 1977 and 1982 - came from the Hunterston A site and were recently discovered after monitoring of the Ayrshire coast revealed surprisingly high levels of radioactivity. Hunterston A closed down sixteen years ago but the reactors at the B plant still generate electricity. British Nuclear Group (BNG), the state-owned company running the site (and formerly BNFL), has stated that documents detailing the material dumped in the pits have been disposed of after they were damaged when water leaked into the room where they were stored. BNG has recruited consultants to find out precisely what the pits contain and how the wastes therein should be treated.

As with many coastal nuclear sites, the long-term effects of climate change on the coastline is being investigated.

Rita Holmes, representative of the Fairlie Community Council on the Hunterston Site Stakeholder Group, said of the industry "It dumped contaminated waste on public land for years and then managed to lose the records... As a result we now have no clear idea of the threat the pits pose to public health." She added, "... if there

is a real risk of erosion, flooding or leakage, waste will need to be dug out and taken elsewhere. Goodness knows what problems remain to be discovered." It was Holmes' persistence that led to information on the pits being revealed.

The Greens' spokesperson on nuclear issue, Chris Balance MSP (Member of the Scottish Parliament) said, "This new disturbing fiasco at Hunterston is yet another example of the problems of dealing with a dirty and dangerous technology of the past. The sooner we move on to sustainable energy for Scotland the better."

BNG has admitted that the public had been able to access the pits but claimed that the levels of radioactivity were too low to pose any risk.

Old Waste and New Nuclear

Trade and Industry Secretary Alan Johnson launched the government's latest energy review on January 23 - presumably the last review, results of which were released just a few years ago, had not been thorough enough or had given the wrong answers. Tony Blair has been sending out signals that he is set on the idea of building new nuclear power plants to supposedly fill the energy gap that would be created when the current crop of aged reactors are shut down and to aid the UK with its climate targets. But if it is correct that the UK will have to deal with a serious shortage of energy once the old nuclear plants are shut down, one would presume that at least one of the government's highly paid advisors or consultants had noted that during the last review. Why then was this urgent need for a new generation of nuclear plants not made clear to the country's citizens earlier - say before the last election?

In a recent interview with *the Guardian*, senior research fellow at the Tyndall Centre for Climate Change Research in the UK, Kevin Anderson said that claims touting nuclear power as the UK's only means to achieve greenhouse gas emissions targets were fundamentally wrong. Dr Anderson went on to call the standard of debate on the issue "abysmal" adding, "that argument is way too simplistic. We can

easily deal with climate change without nuclear power." He further explained that the differing demands of the transport and heating sectors meant that nuclear power supplied around 3.6 percent of the UK's total energy use and that moderate increases in energy efficiency coupled with fuel efficient cars would almost halve demand.

Senior scientists and members of CoRWM have voiced unease and anger at the government's seeming willingness to replace soon to be retired nuclear reactors while the very serious issue of what to do with existing wastes remains in question. For some 30 years now, successive governments have avoided taking action on the impossible problems of nuclear waste, some of which would have to be stored for countless generations to come, while continuing to allow more wastes to be produced.

Environmentalists in the UK have pointed out that the waste mountain would increase at least four fold should the government give its blessing to the construction of ten new nuclear reactors.

John Dalton, Nirex corporate communications manager said, "...it would be sensible for us to consider what we are going to do with this waste before we enter into a new-build scenario."

It would be wise for the Government to listen to the many scientists and analysts that believe, and can prove, that new nuclear build is of no benefit where the urgent problem of climate change is concerned. It would be a brave government that can turn its back on the cheap rhetoric of the nuclear industry and make the most sustainable choice for today and for future generations.

Sources:

The Independent, January 24 & 3, 2006; BBC News, January 19, 2006; *The Guardian*, January 17, 2006; *Sunday Herald*, January 15, 2006; N-Base Briefing 481 & 482, January 14 & 21, 2006; www.corwm.org; Radioactive Wastes in the UK: A Summary of the 2004 Inventory; Nirex report N/089, October 2005 (See <http://www.nirex.com/foi/ukinvent/sum2004.pdf>)

NEW SLOVAK ENERGY POLICY COUNTS ON MOCHOVCE 3&4

In a surprising move, the Slovak Government adopted a new energy policy on January 11. In violation of its own rules of practice, the Cabinet failed to publish the policy proposal for public debate and quietly designated the Christmas holiday period, when no one actually works, as the inter-ministerial consultation period. The new policy completely ignores climate change, cuts renewable energy targets and counts on electricity from the uncompleted nuclear reactors, Mochovce 3 & 4.

(641.5745) WISE BRNO - Although a review or update of the existing energy policy was expected, the proposal now adopted is completely different to the (unacceptably pro nuclear) draft proposed by the then economics minister in early 2005 and was not publicly released before being adopted. Other proposals, also approved by the Government on January 11, were published on its official website beforehand and gave deadlines for comments, but the energy policy was excluded from this process. The new energy policy has been strongly criticised by local environmental organizations for its serious flaws and illegitimate adoption. Analysts are also concerned that the policy could seriously damage the country's energy sector and have negative impacts on the economy.

In the first instance, the policy totally ignores climate change - an issue recognized globally as a having top priority. While the majority of industrialized countries around the world acknowledge that a dramatic reduction in greenhouse gas emissions is necessary, and despite the fact that the Slovak economy has 4.4 times higher CO2 emissions per GNP than the EU-25 average, the Slovak government apparently does not consider the issue relevant to its energy policy. Although the energy sector is the country's main producer of greenhouse gasses, the term "climate change" is not even mentioned once in the entire text. There is no mention of it amongst the priority goals, no targets established, and the policy paper fails to include any strategy that would help the country reach any climate goals.

Secondly, in contrast to the previous

version of the energy policy adopted in 2000, the new document does not discuss the future of Mochovce 3 and 4 - two VVER-440/213 reactors whose construction was suspended in 1993 due to a lack of finance and whose future has been matter of fierce debate. Without producing or citing any analysis or figures, the existence (and completion) of these two new reactors is taken as a matter of fact: the only time it appears in the text is in a by-the-way sentence: "It is expected that in 2015, after Mochovce 3 and 4 become operational and after new renewable projects are realized, Slovakia will gain a surplus of electricity. In 2020, after Bohunice V2 is phased-out, this surplus will not exist anymore." This is despite the fact that the energy policy, approved in 2000 and valid until this January, calculated the economics of Mochovce 3 and 4 as highly disadvantageous and uncompetitive.

Third, the new energy policy further marginalizes renewable energy sources. As with climate and greenhouse gas emissions, it does not state any goals for renewables. And similarly to Mochovce, it again just states somewhere at the bottom of a page that "exploitable potential of renewable energy sources may increase their share in electricity up to 19 percent in 2010, 24 percent in 2020 and 27 percent in 2030". Not even *should*, just *may*. For comparison, the renewables industry's current share is about 17 percent. It is interesting to compare this statement with the targets, as agreed by Slovakia in the EU Accession Treaty: to generate 31 percent of electricity from renewables by 2010.

Unfortunately, this target is not binding and only indicative so the Slovak

government can now easily claim that renewables will in fact not grow at all by 2010, and the targets promised for 2010 will not be achieved even by 2030. In other words, Slovak ministers simply do not expect any development of modern renewable technologies and are seemingly unwilling to encourage any growth in that area.

In the end, it will probably be left to the giant Italian utility ENEL, as soon-to-be owner of Slovak Electricity Utility, to finally decide on these issues. The company does not seem to be at all enthusiastic about investing in Mochovce 3 and 4, unless it receives large benefits and indirect support from the Slovak government - a matter that has been under secret negotiations for some time now. The next issue of the *Nuclear Monitor* will provide a more detail look at the ENEL deal and its ramifications.

Slovakia is due to hold national elections in September and it is likely that a new government, a year from now, may be willing to reopen the energy policy for review. Slovak NGOs will be pushing for this and will also aim to apply pressure on political parties during pre-election campaigning to encourage them to make clear their stance on future energy policy.

Source and contact: Jan Beránek, WISE Brno, jan.beranek@wisebrno.cz

As the twentieth anniversary of the world's worst and most far reaching nuclear catastrophe approaches, the *Nuclear Monitor* will be reporting on the various commemorative events taking place as well as on the long lasting effects of the accident that has left an indelible mark on the world.

CHORNOBYL* HEALTH IMPACT

Fact sheet by Alex Kuzma, Children of Chornobyl Relief Fund, December 2005

On April 26, 1986, at 1:23 a.m., reactor number 4 at the Chornobyl Atomic Energy Station exploded. Subsequent investigations revealed that tests that were being conducted on the operating and backup systems were mismanaged. The plant was immediately shut down. Nonetheless, a large amount of radioactive steam was released into the atmosphere during the explosion. The highest amount of radioactive fallout was registered in the vicinity immediately surrounding Chornobyl.

The atomic energy station and the nearby town of Prypiat are located in northern Ukraine, 90 kilometres north of Kyiv (Kiev), the capital of Ukraine, a city with a population of 2.8 million. At the time, the prevailing winds were directed north to northwest, so that Belarus received the most widespread deposit of radioactive fallout. With subsequent shifts in the direction of the wind, as well as rainfall, northern regions of Ukraine, as well as the southern border of European Russia received radioactive fallout. Soviet authorities neither officially acknowledged the explosion, nor warned their citizens until May 2, 1986.

- Excessive levels of radiation recorded in northern Scandinavia, Wales, Ireland, Northern Italy, Greece, coastal Alaska in the first weeks after the explosion
- As a result of prevailing winds and rains, heaviest radioactive fallout on southern and central Belarus, northern Ukraine
- In Ukraine, over 4.6 million hectares contaminated, some of the most productive agricultural land in the world
- Total amount of radiation released as a result of the explosion at Chornobyl was originally reported as 50 million curies by Soviet authorities. During the past decade, subsequent research in Europe and North America and new calculations have resulted in revised estimated of up to 260 million curies. (Source: MIT research study completed by Dr. Alexander Sich, released January 1994; research supervised by former Nuclear Regulatory Commissioner, Dr. Norman Rasmussen)
- To date, approximately, residents have been permanently evacuated from contaminated regions immediately surrounding the power station; 116,000 of these were evacuated shortly after the explosion
- 600,000 soldiers, firemen, and clean-up workers (men and women) were sent to the disaster site during the radiation emergency in the months after the explosion
- Liquidators (cleanup workers) live in Belarus, Russia, Kazakhstan, and more than 350,000 liquidators live in Ukraine (Source: International Union "Chornobyl")
- During the past decade, approximately 40,000 clean up workers have died, mostly men in their '30s and '40s; US death toll in Vietnam after 12 years of involvement was approximately 50,000 (Source: International Union "Chornobyl")
- A permanent 30 kilometer "dead-zone" was established around the power station where human habitation is forbidden
- 1.2 million people continue to live on lands contaminated by "low-level" radiation, outside the 30 kilometer zone; approximately 1,800 villages affected
- Gradual seepage of radiation into water table, especially the Dnipro River and its tributaries, threatens water supply for millions of people in coming decades

- Total number of evacuees and cleanup workers (those exposed to the most intense levels of radiation) was close to three-quarters of a million people
- Shortly after the explosion, thousands of children and adults in Ukraine and Belarus were stricken with acute radiation sickness; symptoms included vomiting, hair loss, severe rashes; contradicts original official public estimates of 100 people (Source: declassified Soviet Politburo Protocols published in *Izvestiya*, May 1992)
- The World Health Organization reported that thyroid cancer among children living near Chernobyl rose to levels 80 times higher than normal; (Source: *Wall Street Journal*, September 3, 1992, and *Nature*, September, 1992)
- Experts from the University of Hiroshima analysed data on newborns and 30,000 stillborn foetuses in Belarus; researchers concluded that birth defects have nearly doubled since 1986 (UPI wire report July 14, 1994)
- More than 10,000 Ukrainian children have been to Cuba for treatment of leukaemia and other illnesses (*New York Times*, October 6, 1995)
- Overall, oncological illnesses among children in Ukraine have tripled since 1986 (Ministry of Health of Ukraine report, Winter 1994)
- A joint Israeli-Ukrainian study published in the Royal Society of Medicine in London in 2001 found that the children of Chernobyl liquidators born after the 1986 disaster have a rate of chromosome damage seven times higher than their siblings born prior to the nuclear accident.
- The UN Office on Population reported that in 1994, the only two nations in Europe with negative population growth: Ukraine and Belarus. The report attributed this decline in part to increased infant mortality and adverse health conditions stemming from the Chernobyl disaster. Infant mortality in Ukraine stands at twice the European average (14 per 1,000 live births)
- Among males in Russia, life expectancy has dropped precipitously since 1986; Chernobyl suspected as a factor (Source: *New York Times*, September 1, 1995)
- "Chernobyl has fuelled a massive infertility crisis in Ukraine" according to the Boston Globe of January 26, 1996. Fifty percent of all men between the ages of 13 and 29 have fertility problems - the highest rate of infertility in the world
- According to radiation health experts working for the National Academy of Sciences most cancers that result from radiation exposure do not develop until 10-20 years after exposure. The highest incidence of cancer is expected to occur over the next 5-10 years and therefore no accurate assessment of Chernobyl's overall impact can be made until this period has expired. (United States National Academy of Sciences, BEIR-5 Report)

NOTE: For the above information, if a source is not provided, then the information can be confirmed with the Ministries of Health of Chernobyl or of Environment Protection and Nuclear Safety of Ukraine.

**Chernobyl is the Ukrainian spelling*

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How much radiation was released by Chernobyl?

The Chernobyl reactor exploded April 26, 1986, and burned uncontrolled for two weeks spreading deadly, long-lived radioactive isotopes around the northern hemisphere.

Piecing together the truth about how much radioactivity was spewed into the environment is a difficult job of ferreting out bias and vested interest.

As the 20th anniversary of the disaster approaches, the nuclear industry and its proponents in government have been trying to minimize and trivialize the pollution and its consequences. Do not be fooled.

- The pro-nuclear Time magazine reported in 1989 that perhaps "one billion or more" curies were released, rather than the 50 to 80 million estimated by Russian authorities. (1) One curie is the amount of radiation equal to the disintegration of 37 billion atoms -- 37 billion becquerels -- per second. A single curie is a huge amount of radiation.
- The U.S. government's Argonne National Laboratory has said that 30 percent of Chernobyl's total radioactivity -- 3 billion of an estimated 9 billion curies - was released. (2)
- Scientists at the U.S. Lawrence Livermore National Laboratory suggested that one-half of the core's radioactivity was spewed -- 4.5 billion curies, according to the World Information Service on Energy, quoting Science magazine, June 13, 1986.
- Vladimir Chernousenko, the chief scientific supervisor of the "clean up" team responsible for a 10-kilometer zone around the exploded reactor, says that 80 percent of the reactor's radioactivity escaped -- something like 7 billion curies. (3)
- At the Union of Concerned Scientists, senior energy analyst Kennedy Maize, concluded that "the core vaporized" -- all 190 tons of fuel, and all 9 billion curies. (4)
- Former Chair of the U.S. Nuclear Regulatory Commission, Joseph Hendrie, concluded likewise, saying, "They have dumped the full inventory of volatile fission products from a large power reactor into the environment. You can't do any worse than that." (5)
- The Russians and the International Atomic Energy Agency (IAEA) claimed in a 1986 report, that 50 million curies of radioactive debris, plus another 50 million curies of rare and inert gasses were discharged.

However, the skyrocketing incidence of cancers, leukaemia and other radiation-induced illnesses leads scientists to suspect that the higher radioactive fallout estimates are likely. Pandemic numbers of thyroid cancers led even the cautious Dr. Alexander Sich, in his Chernobyl cover story for the May 1996 Bulletin of the Atomic Scientists to conclude that "higher [radiation] release estimates support the conclusions drawn by medical experts."

- Geneticist Valery N. Soyfer, founder of the former Soviet Union's first molecular biology laboratory, analysed the 1986 report to the IAEA, which has since been condemned as a cover-up. Dr. Soyfer says that if only 100 million curies were vented, then world "background radiation doubled at once". (6) This claim was unsupported by accompanying evidence, but if "background" was doubled by 100 million curies, then it was multiplied 180 times by the release of Chernobyl's "full inventory". (Nineteen months after the Chernobyl disaster, in November 1987, the U.S. government officially doubled its estimate of the average "background" radiation to which we are exposed, from 170 millirem to 360 mR per year. (7)
- Richard Mould, in his book "Chernobyl: The Real Story", also estimates that some 50 million curies of different radioactive isotopes were discharged from the reactor (8) while others suggest 80 million curies. (9)

Sources:

1. Time, November 13, 1989
2. The Chicago Tribune, June 22, 1986
3. "The Truth About Chernobyl", Critical Mass: Voices for a Nuclear-Free Future, Ruggiero and Sahulka, Eds., 1996, by Open Media, p. 127
4. Not Man Apart, the journal of Friends of the Earth, March 1987
5. The Minneapolis Star Tribune, May 19, 1986
6. St. Louis Post Dispatch, April 24, 1987
7. The New York Times, November 20, 1987
8. Richard Mould, "Chernobyl: The Real Story" (1988), p. 77
9. Alina Tugend, "Victims of Silence," Portland Oregonian, June 21, 1993, p. A3; Murray Feshbach, "A Nuclear Eco-Crisis," Sacramento Bee, July 18, 1993, p. F1

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JAPANESE NGOS PETITION THE UN

On January 5, Japanese NGOs sent a letter to IAEA Director General Mohamed ElBaradei and the Board of Governors urging the inter-governmental body to discuss and take action to ensure Japan upholds its written and unequivocal 1997 commitment made to the international organization not to produce surplus plutonium. (1)

Despite this commitment, Japan will separate out four tons of plutonium at the Rokkasho reprocessing plant; if active testing using spent nuclear fuel begins as scheduled in February 2006. The stark fact is that the Japanese nuclear power program has no use for this plutonium, now or in the foreseeable future.

The Plutonium Utilization Plan of Japan presented to the IAEA in 1997 stated that mixed plutonium-uranium oxide (MOX) fuel in light water reactors would be the "principle way of utilizing plutonium in Japan over the next few decades." The program, however, has never gotten off the ground due to public opposition, data falsification scandals in 1999 and 2002 and the fatal accident at the Mihama nuclear power plant in 2004. Today, not a single electric utility has the go ahead to consume MOX fuel.

Furthermore, a fundamental technical problem exists. Japan lacks the capability to turn any plutonium produced at Rokkasho into MOX fuel. There is only a government "expectation" that a MOX fuel fabrication plant be fully operational by fiscal 2012. (2) Therefore, if active testing begins at Rokkasho this year, any separated plutonium will languish at the facility.

Moreover, a massive cache of Japanese plutonium already exists: thirty-seven tons sit in Europe. Japan's Framework for Nuclear Energy Policy issued in October 2005 gives priority to the consumption of this

plutonium in Europe over any produced at Rokkasho (3).

Japan allowed the stockpile in Europe to grow even after the MOX program fell apart, although it was clear the plutonium could not be consumed. Now, it is set to accumulate more plutonium, this time in Japan.

Simply put, Japan already has tons of plutonium and no way to burn it. Further stockpiling is not only irresponsible but also a clear break with Japan's pledge to produce no surplus plutonium.

The petition sent to the IAEA by Green Action, Citizens' Nuclear Information Center and Greenpeace Japan states, "Japan originally made this commitment in the interests of nuclear non-proliferation and disarmament, a field in which it is a valuable leader. Given the heightened political tension around disarmament and non-proliferation in North East Asia, and its role as Chair of the IAEA Board of Governors, Japan should not renege on this commitment."

Green Action director Aileen Mioko Smith stated, "Japanese utilities will shortly be going public with a fabricated plutonium utilization plan. The Japanese government is intending to approve it. Instead Japan should keep its promise to the IAEA and indefinitely postpone testing at the Rokkasho reprocessing plant." For these reasons, Japan should indefinitely postpone active testing at the Rokkasho reprocessing plant.

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(2) Japan Atomic Energy Commission, "Framework for Nuclear Energy Policy", 14 October 2005, p.34. Available at <http://aec.jst.go.jp/jicst/NC/eng/index.htm>}<http://aec.jst.go.jp/jicst/NC/eng/index.htm>
(3) Ibid, p.11.

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IN BRIEF

U.S. utility admits cover up. FirstEnergy Corp. has admitted that some of its lied to regulators about safety violations at the Davis-Besse plant in Ohio but the utility has managed to reach a deal with the US Department of Justice (DOJ) in order to avoid being indicted. The company's nuclear operating unit, FirstEnergy Nuclear Operating Co. (FENOC) agreed to pay a US\$28 million penalty and cooperate with criminal and administrative investigations and proceedings. FENOC will also pay a fine of US\$5.45 million to the Nuclear Regulatory Commission for the corrosion problem.

Davis-Besse was closed down in 2002 following the discovery of a boric acid leakage that had made a hole in the reactor vessel head. Two former plant workers and a contractor were indicted over the cover-up in Ohio on January 19. The three men are charged with working to conceal the condition of the reactor vessel head and of lying about the extent of inspections carried out at the plant. If convicted the men face 20-25 years in prison, while their former employer gets let off with a fine. The plant went back into operation in 2004 after the vessel head was replaced and various staff changes made - safety programs at the plant were also revised.

Reuters, January 23, 2006

South Carolina's radwaste burden to triple. While promising to protect workers, surrounding communities and the environment, a recent U.S. Department of Energy (DOE) announcement will result in the establishment of the Savannah River Site (SRS) as a permanent nuclear dump. The new DOE policy, the first regarding liquid high-level waste currently stored in tanks at SRS, will signal the dumping of an amount of radioactivity that will double that already buried at the neighbouring Barnwell nuclear dump. Barnwell, a 235-acre site, takes waste from commercial nuclear power reactors and in 2003 already held waste with an estimated radioactive burden of 3 million curies. If all the waste impacted by the DOE's decision were to be dumped at SRS, it would be equivalent to 75 new Barwells on the Savannah River.

Joint NIRS, Action for a Clean Environment and Carolina Peace Resource Center press release, January 23, 2006

TMI workers sleeping on the job. AmerGen Energy, the operator of Three Mile Island and subsidiary of Exelon Nuclear, has revealed that it has been investigating reports of 'inattentiveness' by employees during the last two years. (Inattentiveness is industry speak for sleeping) In December, *the Patriot-News* reported two incidents of 'inattentiveness' involving a security guard and a shift manager near the control room and now AmerGen itself has disclosed three other cases, two involving security guards, found in a state of 'inattentiveness' in 2004 and 2005. The company said that none of the incidents had any impact on the safe operation of the plant and that the workers had been disciplined. The case of the shift manager, however, remains under investigation. Nuclear Regulatory Commission officials are said to be monitoring the case but it is unknown whether the agency will conduct its own probe. Eric Epstein of the Three Mile Island Alert watchdog group called for an independent investigation to look at just how common an occurrence 'inattentiveness' is at the plant and how many people regularly engaged in the activity while at work.

The Patriot-News, January 18, 2006

Radioactive produce still arriving at Moscow's markets. Nearly 20 years after Chernobyl, large amounts of radioactive goods are still reaching market stalls in Moscow from the west of the country and Belarus. In 2005, some 830 kilograms of radioactive produce were seized by officials at markets in Russia's capital according to a spokesperson from Radon, the municipal authority in charge of radioactivity security. Much of this produce consists of mushrooms and berries. Radon is called in when contaminated goods are found - all market places have a laboratory that checks goods before sale - and the agency is charged with removing and treating the goods, which are classed as radioactive waste.

AFP, January 18, 2006

EU Commission to recommend nuclear power. EU Energy Commissioner Andris Piebalgs has said that the Commission would put more emphasis on recommending nuclear power in the wake of the Russia-Ukraine gas row. Piebalgs told the Viennese newspaper *the Standard*, "Which states build atomic energy plants, they have to decide for themselves. But new nuclear power stations must be built under market conditions. I don't see any subsidy mechanisms any more. Up till now many plants were indirectly subsidized."

Deutsche Presse-Agentur, January 5, 2006

Sudan accused of illicit nuclear deals. A European intelligence assessment obtained by *the Guardian* newspaper suggests that Sudan has been acting as a conduit for engineering equipment that could be used in nuclear weapons programmes. Between 1999 and 2001, Sudan imported 20 million pounds (almost US\$36 million) worth of dual-use equipment and it is thought that at least some of the equipment came from Germany. Front companies and third countries were used to import machine tools, gauges and hi-tech processing equipment from western Europe for Sudan's military industries in recent years.

Western governments, intelligence agencies and international investigators have been alarmed by the extent of the black market and are especially concerned about the whereabouts of the equipment purchased, which has since disappeared from Sudan. It is thought that the goods were probably traded by the A. Q. Khan's proliferation ring - Khan is known to have visited Sudan between 1998 and 2002. It is feared that there could also be a link to al-Qaida given that Osama bin Laden was a resident there before moving to Afghanistan.

Although Sudan does have a small civil nuclear programme, the equipment it purchased is believed to be too sophisticated for its own use.

The Guardian, January 5, 2006

Suspected DU death. A Peruvian security guard in Iraq as part of the country's 200-man contingent has died a few hours after returning to Lima, Peru, and just days after having been diagnosed as suffering with severe leukemia in Baghdad. Wilder Guitierrez Rubio, 38, was immediately flown home following the diagnosis. The World Socialist Web Site.org reported that Guitierrez had been sent to Iraq in early October to provide in Baghdad's Green Zone and is believed to have contracted leukemia due to exposure to the high levels of uranium in the country.

UPI, December 29, 2005

German renewables producing more power. Renewable sources are now producing more energy than nuclear power stations in Germany. The German Renewable Energy Federation (BEE) has reported that the renewable sector has also created 150,000 new jobs as well as displacing some 80 million tones of CO₂ emissions in 2005. Nuclear has contributed less than six percent of the entire energy consumed in Germany for years while the renewables sector made of 6.4 percent of the electricity, heat and fuels consumed in 2005 - up from five percent in 2004. BEE manager Milan Nitzschke explained that over the years, distorted energy statistics have systematically drawn a false picture of the contribution nuclear makes to the total energy supply. "What was measured was the use of uranium, of whose energy content less than a third reaches the consumer as electricity." Nitzschke further explains that it is not primary energy but final energy - what reaches the consumer - that counts. "If you're clear on just how little atomic energy actually contributes to the energy supply in Germany and the world, it's hard to follow the notion of some politicians that we could get away from fossil fuels with nuclear power."

New Energy, No. 5, October 2005 (www.neueenergie.net)

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WISE/NIRS NUCLEAR MONITOR

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