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Nuclear Waste Problems - from Mining to Reactor Waste

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NUCLEAR FUTURE - WEAPONS

When you talk about the nuclear future, you have to talk about nuclear weapons and nuclear power as Siamese twins

Only 18 hours after the nuclear bomb was dropped over Hiroshima, US president Harry S. Truman - who gave the order to use the nuclear bombs against Japan – announced his disastrous message, "atoms for peace", thus advertising the use of nuclear power for energy production.

In the IAEA bulletin 40/4/1998 (A Radiological Legacy)

Abel J. Gonzalez writes:
"The fuel cycle for military purposes is similar to that for the peaceful programmes for nuclear electrical energy generation: uranium mining and milling, uranium enrichment, fuel fabrication, operation of material-production reactors, and fuel reprocessing mainly for the separation of plutonium."

A thousand MW reactor

produces in average 20 tons of spent fuel yearly.
This spent fuel contains enough plutonium for 40 nuclear bombs.

In the Swedish daily newspaper Dagens Nyheter in March 2003

Curt Mileikowsky, a nuclear specialist, and former director of the nuclear energy department of Asea, wrote a detailed article about nuclear weapons and nuclear proliferation.

He stresses that the basic material for nuclear weapons is uranium, a fairly general basic element that can be found within the borders of many countries.

My remark: In Finland and Sweden there are several reservations and even claims for uranium mining at the moment.

Mileikowsky emphasizes further, that scientific and technical basic information for the production of nuclear weapons can today be found in thousands of libraries and laboratories, and that strategic materials and components can be bought on the international markets avoiding the IAEA and the Treaty on Non-Proliferation of Nuclear Weapons (NPT).

According to Mileikowsky also so called “weapons of terror” are nuclear weapons. In order to produce such weapons reactor grade plutonium can be used directly.

In the Newsweek Magazin in February 2006

Arjun Makhijani, manager of the Energy and Environment Institute in Maryland in the U.S., writes that worldwide there is enough spent reactor fuel to build about 200.000 nuclear bombs.

According to the nuclear industry one solution to deal with this problem is ”reprocessing” – which means that plutonium is separated from the spent fuel and used as a part of new fuel.

Makhijani however, stresses that as a matter of fact, it was nuclear proliferation that once got the U.S. to withdraw from commercial reprocessing, and to protest against reprocessing in other countries. The reason was clearly the nuclear tests made by India in 1974.
Both India and Pakistan built nuclear devices using the infrastructure for nuclear power.
(India produced plutonium in a reactor of Canadian origin).
North Korea got its plutonium from a supposedly commercial reprocessing reactor.

Makhijani also worries about the growing tensions between China and India because of the oil and gas reserves at sea.
Some leading politicians in Japan have mentioned the possibility of Japan getting nuclear arms to protect their interests.
With the plutonium that has been reprocessed in France, Japan could in less than one month become a nuclear state.
Since 1969 Japan has more than 160 times transported thousands of tons of spent fuel to Europe for reprocessing.
Up till today only a small fraction of this fuel has, since 1995. been shipped back to Japan.

I would like to add that for over 30 years, overseas spent nuclear fuel has been reprocessed in the UK, in Sellafield, a disastrous plant. Since 1976 all UK reprocessing contracts have contained an option for returning the waste to its country of origin.
At the end of September (2009) the UK government informed that the VVR programme (Vitrified Residue Returns) is set to commence in 2009/2010.This programme will take around 10 years to finish and means a lot of super-dangerous transports.

France has already and established transport programme for reprocessed spent fuel.

A more recent warning about the connection between nuclear weapons and nuclear power was published in the Guardian on March 16th, 2009

where the prominent member of the Oxford Research Group thinkthank, Frank Barnaby, emphazised the dangers of nuclear proliferation that could lead to ”nuclear anarchy”.
According to Barnaby any country, choosing to operate new-generation nuclear reactors, would have relatively easy access to plutonium.

He also emphazised that the shortage of uranium for the type of reactors (i.e. EPR) that EDF and others are considering to build in Britain, could encourage them to reprocess fuel and produce more plutonium.

Barnaby is thus warning about exactly the type of reactor that is being built in Olkiluoto in Finland!

In connection with this I would like to tell you about the statement of professor Alexei Yablokov at a nuclear symposium in Austria in 2004. Yablokov is a member of the Russian Academy of Science and he was also a special adviser of the Boris Yeltsin administration.
In this function he was once negotiating with a leading German administrator and asked him how much time Germany would need to build a nuclear weapon?
The administrator answered with a question. ”Do you mean weeks or months? ”

In connection to this I would also like to mention, that about a month ago (UPI.com 28.9.09) the Brazilian Vice President Jose Alencar said that he favors Brazil ndeveloping nuclear weapons as a deterrent against any foreign agressors's attempt to capture Brazils offshore oil fields.

Today there are 9 nuclear weapons states in the world and 32 nuclear power states

the US (ab. 10.300 nuclear warheads), Russia (ab. 16.000), France (ab 350), Great Britain (ab. 200), China (ab. 410), India (75-110), Pakistan (50-110), Israel (100-200), North-Korea (1-6)

At least 40 industrializing countries – from the Middle East to South America – have let UN officials know, that they are interested to start nuclear energy programs

Their best supporter is the French president Nicolas Sarkozy. He promotes a global nuclear power renaissance and has signed new bilateral nuclear trade agreements that have been negotiated with Algeria, Jordan, Libya, Morocco, Tunisia, the United Arab Emirates.

But surprise, surprise! Supporters can be found also in Finland. In January 2009, the Finnish minister of environment Paula Lehtomäki (Center Party) was marketing nuclear power in an interview made for the official news agency of the Arab Emirates.
Lehtomäki said that Finland is prepared to co-operate with the Arab Emirates in the ”peaceful” nuclear field, where Finland is one of the leading countries in the world (YLE Uutiset 7.1.09).

On top of all new states interested in starting up nuclear power programs

there are many states that already have nuclear power plants, that are planning to build new once, amongst others Finland, France, England, China, India and even Holland.

This despite the fact that the OL 3-reactor being built in Finland, is most likely at least 4 years late, and despite the fact that the price has nearly doubled. Now the energy company TVO, and Areva the builder of the plant, are fighting about who shall pay what, and how much?

But back to the connection between “atoms for peace” and nuclear weapons

because when talking about this connection it must be stressed, times and times again, that depleted uranium weapons, DU-weapons, described earlier here today, are strongly connected to the “atoms for peace” program.
DU is a bi-product of the nuclear fuel production for civil reactors. It is also a bi-product of reprocessing spent fuel.

The fuel production of a 1.300 MW reactor causes yearly some 210 tons of depleted uranium.

For the nuclear industry this is waste, that they have to get rid of in an expensive way. By using the waste for weapons, the nuclear industry can save the costs for taking care of this waste, and the weapon industry gets raw material for extremely destructive weapons almost for free.
The conclusion is, that the more fuel we produce for civil nuclear reactors, the more likely DU-weapons are going to be produced in even more countries.

Today some Some 20 countries have DU weapons in their military arsenals. (UK, USA, France, Russia, Greece, Turkey, Israel, Saudi Arabia, Bahrain, Egypt, Kuwait, Pakistan, Thailand, Iraq and Taiwan).

Most of the US weapons contain uranium; the missiles, the smart bombs, the free falling dumb bombs, the bullets, the tank armours and the cruise missiles.
Armour-piercing shells are known as depleted uranium penetrators.

DU is heavier than lead and can penetrate heavy tanks and bunkers.

When hitting an object, the uranium starts burning and emits tiny particles of uranium oxide, that in the form of dust pollutes the environment. The particles can be carried in the air over long distances.

Depleted Uranium (Uranium 238) is a radioactive, and chemically toxic heavy metal.
The half-life of uranium 238 is 4.5 billion years.

Where have DU-weapons been used?

DU-weapons have been used in many wars.

The US and Great Britain used them – fully aware of the toxity – in the Gulf war and in Iraque.
NATO used DU-weapons in Kosovo, Serbia, Bosnia and most likely in Afghanistan.
Israel, according to some sources, used them in Lebanon and in Gaza.

What are the effects of DU-weapons?

The tiny uranium oxide particles are small enough to be inhaled.
Through the lungs they reach the blood.
Through the blood they reach the liver and the kidneys.

Chronical uranium poisoning damages, like AIDS, the immune system. It also causes cancer, especially leukemia, genetic mutations, birth defects, neurological damage, skeleton and kidney damage, skin rashes, muscle pain, memory loss and so on.

In Southern Iraque the doctors are comparing birth defects due to the use of DU-weapons in new born babies to the situation in Hiroshima and Nagsaki.

The film producer Frieder Wagner described the situation in the following way in the Swiss Zeit-Fragen –paper in June 2006:
” In the children’s hospitals in Bagdad and Basra I have seen horrible pictures that still today follow me in my sleep: new born babies without eyes, without nouse, without head, without hands and feet. Babies, whose internal organs were outside the body in a kind of bag. All these babies died within a few hours, or days, after their birth.”

Robert C. Koehler, an award-winning Chicago based journalist, reported in 2004 on DU effects in Afghanistan. His headline was: “Silent Genocide”.

Prior to her death from leukemia in September 2004, Nuha Al Radi , an accomplished Iraqi artist and author of the "Baghdad Diaries" wrote: "Everyone seems to be dying of cancer. Every day one hears about another acquaintance or friend of a friend dying. How many more die in hospitals that one does not know? Apparently, over thirty percent of Iraqis have cancer, and there are lots of kids with leukemia…The depleted uranium left by the U.S. bombing campaign has turned Iraq into a cancer-infested country. For hundreds of years to come, the effects of the uranium will continue to wreak havoc on Iraq and its surrounding areas."

Then finally some words about the NPT-treaty (Treaty on the Non-Proliferation of Nuclear Weapons)

Despite all the nice promises in this treaty, very little has been done since the treaty was born in 1968.
On the contrary the number of nuclear weapons states has grown from 5 to 9.

The main problem is that according to the treaty all states have the right to use nuclear technology for peaceful purposes, that is for producing nuclear energy.

The review process built into the NPT, involves a five-yearly meeting of the NPT member states to "review the progress of the Treaty" and thus reviews the progress of nuclear non-proliferation.

In 1995, the member states decided to extend the treaty indefinitely.
In 2000, a 3 point action plan for the systematic and progressive disarmament of the world’s nuclear weapons was adopted by the 187 member states.
In 2005, the 5 week long conference could hardly agree upon an agenda and some countries did not any longer accept the 13 point action plan. No formal final document was agreed upon and the conference ended in a fiasco.

In May 2010 the next review conference is held in New York

Expectations are really high. What are the signs?

In April (2009) Barack Obama held his famous speech in Prague

What was the message?

”The existence of nuclear weapons is the most dangerous legacy of the Cold War. Today, the Cold War has dissapeared but thousands of those weapons have not...
As a nuclear power – as the only nuclear power to have used a nuclear weapon – the United States has a moral responsibility to act...
We will reduce the role of nuclear weapons in our national security strategy and urge others to do the same...
To reduce our warheads and stockpiles, we will negotiate a new strategic arms reduction treaty with Russia this year...
To achieve a global ban on nuclear testing, my Administration will pursue U.S. ratification of the Comprehensive Test Ban Treaty...

We should put an end to the production of weapons grade materials...
We will strenghten the Non-Proliferation Treaty..."

So far so good, but then:

"We should build a new framework for civil nuclear operation, including an international fuel bank, so that countries can access peaceful nuclear power without increasing the risks of proliferation..."

And believe it or not, after this Obama said:

"Finally, we must ensure that terrorists never acquire a nuclear weapon..."

You can draw your own conclusions about wether this is a seriously meant commitment to nuclear proliferation.

Nobel peace prize or not! Usually payment requires achievements. Can we hope for them?

If you look at what is happening in the U.S. you get rather pessimistic:

According to Inter Press Service 30.9.09, the U.S. Department of Energy's National Nuclear Security Administration continues to push forward on a programme called Complex Modernisation, which would expand two existing nuclear plants to allow them to produce new plutonium pits, and new bomb parts out of enriched uranium, for use in a possible new generation of nuclear bombs.

Plutoniums pits are the central core of nuclear weapons.

According to the Inter Press Service there are also plans for expansion of enriched uranium processing at the Y-12 facility in Oak Ridge, Tennessee.

Addditionally according to Military & Aerospace Electronics, the U.S. Department of Defense leaders have found the money they sought to speed deployment of the Massive Ordnance Penetrator (MOP), a buster super bomb that is designed to go deeper than any existing nuclear bunker-busting weapon.

Since Depleted Uranium (DU) is heavier than lead and can penetrate heavy tanks and bunkers, it is very likely that DU will be incorporated in the MOP.

Finally, what can be done?

We have, together with all possible progressive forces, to create a pressure from beneath for total nuclear disarmament.

And there are some positive things to report:

Mayors for Peace

Active since 1990, consisting at the moment of more than 3.100 cities and regions demanding total nuclear disarmament till the year 2020.
Belgium 337 cities, Germany 315, Italy 312. Norway 86, Denmark 13, Sweden 11, Finland 3.

In June 2008 the US Conference of Mayors

at its annual meeting in Miami, unanimously adopted a far-reaching resolution supporting the Hiroshima-Nagasaki Protocol, entitled "Support for the Elimination of All Nuclear Weapons by the Year 2020".

In December 2008 U.S. giants joined a group called Global Zero

that has enlisted 100 world leaders – including billionaire businessman Richard Branson and Jordan's Queen Noor – for a campaign to eliminate nuclear weapons over the next 25 years.
The group - which includes political, military, business, faith and civic leaders from across political lines – plans a World Summit of 500 leaders in January 2010.

The European Parliament in April 2009

approved with a majority of 177 votes against 130 an amendment introducing the "Model of Nuclear Weapons Convention" and the "Hiroshima-Nagasaki Protocol" as concrete tools to achieve a nuclear weapons free world by 2020.

In July 2009 the International Trade Union Confederation (ITUC) launched the campaign against nuclear weapons (support to Mayors for Peace)

ITUC represents 170 million workers in 312 affiliated organisations from 157 countries.
It is one of the largest organisations worldwide.

In September 2009 the World Council of Churches adopted unanimously

a declaration concerning nuclear weapons.
The World Council of Churches thinks that the international agenda at present offers unprecendented opportunities, between now and June 2010, to make decisive progress towards a world freed from nuclear weapons.
Nearly 250 protestant and orthodox churches belong to the World Council of Churches.

And last but not least – we can join Footprints for Peace

25 walkers from USA, Australia, Switzerland, Holland, France and Italy in April 2009 joined together to walk for over 70 days, from the World Health Organisation in Geneva to the European Parliament in Brussels, to raise awareness about alternative energy and sustainable lifestyle and exposing the deadly effects of the nuclear industry.

And we can join them in spring 2010 when they will be walking from the Y12 Nuclear Facility in Oak Ridge, Tennessee, mentioned earlier, to the United Nations in New York for the NPT Review Conference.

More than 50 years ago Albert Einstein warned about the dangers of nuclear technology

when he stated, that the splitting of the atom has changed everything except our ways of thinking, and thus we are drifting towards a catastrophy mankind has never experienced before.

And some years later John F. Kennedy, seeking to break the logjam on nuclear disarmament, said, "The world was not meant to be a prison in which man awaits his execution."
(State of the Union Address, January 11, 1962)

So see you all walking for peace next spring from Oak Ridge, Tennessee to New York!

But our goal is not only to get rid of all nuclear weapons in the world – but also to shut down all nuclear power plants, and other nuclear facilities in the world. With the exception for medical use when it is really necessary.

Because if we do not do that nuclear weapons will be back on the agenda in no time!

So therefore

I also hope to see you all in Copenhagen for the Climate Summit in December this in order to take part in the big demonstration (December 12th) under the slogan ”Don’t Nuke the Climate”.

And I also hope to see you all for the waste conference in France in December 2010.