

# NUCLEAR MONITOR

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## MOCHOVCE PUBLIC PARTICIPATION INSUFFICIENT

On 14 January 2011 the Aarhus Convention Compliance Committee (ACCC) slammed Slovakia for lack of proper public consultation on the Mochovce 3,4 nuclear power project. This decision means that Slovakia also is in breach with EU law and that the European Commission will have to supervise its implementation. The decision implies that construction of the Mochovce nuclear power plant will have to be stopped until a new Environmental Impact Assessment has been carried out.

(722.6110) Greenpeace EU Unit- Jan Haverkamp, Greenpeace EU nuclear expert: "This groundbreaking decision shows that you cannot build dangerous nuclear power stations without taking the input of the public into proper account. It is now up to the European Commission to keep Slovakia to its legal obligations. Mochovce construction should stop right away."

The Mochovce 3,4 nuclear power project is situated in Southern Slovakia near the Hungarian and Austrian border. It is constructed by the energy giant ENEL from Italy. It consists of two 1970s soviet design reactors that miss crucial safety features, including a secondary containment that is to protect the power station from among others attacks from outside.

Slovakia allowed active construction of the Mochovce 3,4 nuclear reactors before the public was properly consulted on the project. Greenpeace, Slovak NGO Za Matku Zem, Global2000 (Friends of the Earth Austria) and the Viennese Ökobüro filed complaints to Slovak courts and the UNECE Aarhus Convention Compliance Committee (ACCC) based in Geneva. The ACCC is the highest legal organ interpreting the Aarhus Convention on access to information, public participation and

access to justice in environmental matters. The ACCC decided that Slovakia was wrong to allow construction of Mochovce without proper public participation being finished. The ACCC decision means that Slovakia will have to order a halt to construction and re-do the public participation in the Environmental Impact Assessment. Because the EU is a signatory to the Aarhus Convention, the European Commission is obliged to start procedures against Slovakia for breach of the Convention and related EU directives.

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# URANIUM MINING ISSUES: 2010 REVIEW

For the thirteenth consecutive year, The Nuclear Monitor is proud to publish the annual Uranium Mining Issues Review. The reviews are compiled by Peter Diehl from the WISE Uranium project. First published in the last issue of 1998 it gives an in-depth overview of developments regarding all aspects of uranium mining: mines, exploration, environmental issues, indigenous people, production and so on.

**(722.6111) WISE Uranium Project** - During the first half of the year 2010, the uranium spot market price, as published by Ux Consulting (UxC), decreased from US\$ 44.50 to 40.50 per lb U<sub>3</sub>O<sub>8</sub>. It then increased to 62.50 per lb U<sub>3</sub>O<sub>8</sub> at year end, 40% above the value at the beginning of the year, but still far below the unprecedented June 2007 peak of 136 US\$ per lb U<sub>3</sub>O<sub>8</sub>. The long term average price, as published by Cameco, recovered from US\$ 61 to 66 per lb U<sub>3</sub>O<sub>8</sub>.

## URANIUM EXPLORATION PROJECTS

### - Moratoria:

The Canadian province of Québec declined a uranium mining moratorium, dismissing a petition signed by 14,000 supporters.

Greenland relaxed its zero-tolerance uranium policy for exploration licenses, thus enabling continued exploration work at the Kvanefjeld rare earth/uranium deposit.

### - Environmental opposition against exploration:

Uranium exploration projects continued to draw opposition at a number of locations:

- \* at various sites in the Canadian province of Québec,
- \* in the Tallahassee area in Colorado, USA,
- \* near the Grand Canyon in Arizona, USA,
- \* in the Syunik province in Armenia (where a demonstration of 2,000 was held in November), and

\* in Balpakram National Park in India's Meghalaya state.

In Argentina, a High Court halted a uranium project in the UNESCO World Heritage area Quebrada de Humahuaca in Jujuy province.

### - Violations at exploration sites:

At several uranium exploration sites, violations were found and, in some cases, even prosecuted:

- \* Uravan Minerals Inc. was ordered to clean up its Sand Lake exploration camp site in Nunavut, Canada;
- \* Titan Uranium Inc was fined CDN\$ 85,676 for burning hazardous waste in northern Saskatchewan, Canada;
- \* Ur-Energy Inc. paid a US\$2000 penalty for multiple violations identified at its Lost Creek uranium exploration site in Wyoming, USA; and
- \* Mesteña Uranium LLC was cited for well plugging deficiencies at its exploration wells in Texas, USA.

### - Positive preliminary economic assessments:

Positive preliminary economic assessments were announced for more than a dozen of proposed uranium mining projects. As most of these assessments were based on uranium prices on the order of US\$ 60 per lb U<sub>3</sub>O<sub>8</sub>, while the actual spot price was hovering close to US\$ 40 during the first half of the year, the anti-uranium activist could hardly suppress a smile. Towards the end of the year, however, with the uranium spot price reaching just that level, the smile migrated to the mine developers.

Positive preliminary economic assessments, preliminary

feasibility studies, or scoping studies were announced for the following uranium mine projects:

- \* Daneros underground mine in Utah, USA;
- \* Dewey-Burdock in situ leach mine in South Dakota, USA;
- \* Coles Hill mine in Virginia, USA;
- \* Sheep Mountain mine in Wyoming, USA;
- \* Lance in situ leach mine in Wyoming, USA;
- \* Centennial in situ leach mine in Colorado, USA;
- \* Colibri II/III mine in Peru;
- \* Marenica open pit mine with heap leaching in Namibia;
- \* Madaouéla underground mine in Niger;
- \* Nyota open pit mine in Tanzania;
- \* Kvanefjeld rare earth/uranium mine in Greenland;
- \* MMS Viken open pit mine in Sweden; and
- \* Ambassador mine in Western Australia.

The Etango low-grade uranium mine project in Namibia only just reached feasibility at a uranium price of US\$ 60 per lb U<sub>3</sub>O<sub>8</sub>, and this only, after the size of the already huge 400 m deep open pit had casually been doubled from 3 by 1 km to 6 by 1 km.

## URANIUM MINE DEVELOPMENT PROJECTS

**License applications** for new uranium mines were actually filed for the following projects:

- \* the North Trend and Three Crow Expansion projects of Cameco's Crow Butte in situ leach mine in Nebraska, USA;
- \* the Dewey Burdock in situ leach mine in South Dakota, USA;
- \* the Ludeman in situ leach mine in Wyoming, USA; and
- \* the by-product extraction of uranium at the Talvivaara nickel/zinc mine in Finland.

### Uranium mining licenses were issued for:

- \* the Palangana in situ leach mine in Texas, USA; and
- \* the Moore Ranch in situ leach mine in Wyoming, USA

**Projects currently under development, or being prepared for development:**

In Canada:

- \* Areva's Kiggavik project in Nunavut;
- \* Cameco's Cigar Lake project in Saskatchewan, where underground development resumed after the water inflow had been stopped;
- \* Cameco's Millennium project in Saskatchewan;

In the USA:

- \* the Dewey-Burdock in situ leach mine project in South Dakota;
- \* the Coles Hill mine project in Virginia, where studies were commissioned from several sides to assess possible impacts;
- \* the following in situ leach projects in Wyoming: Ludeman, several satellites to the Christensen Ranch / Irigaray mine, Lost Creek, Moore Ranch, Nichols Ranch, JAB/Antelope, Jane Dough, Reno Creek, Lance, Ross, and Gas Hills (in March, the U.S. EPA raised concern about potential contamination of aquifers from the planned deep disposal

wells for three Wyoming uranium in situ leach projects; also in March, the U.S. Interior Department said the sage grouse deserves - but won't get - protection [!], a matter of concern for the JAB/Antelope projects;

- \* the Sheep Mountain conventional uranium mine project in Wyoming;
- \* the Piñon Ridge uranium mill in Colorado;
- \* the Centennial in situ leach mine in Colorado, where the water table will have to be raised to leach the part of the uranium ore zone that is located above the groundwater level (!);
- \* the Daneros underground mine in Utah;
- \* the Churchrock/Crownpoint in situ leach mine in New Mexico, where court decisions further paved the way for a production start in 2013;
- \* the Roca Honda underground mine in Cibola National Forest, New Mexico;
- \* Denison's Arizona 1 mine in Arizona, where mining started in January;
- \* Denison's Pinenut, Canyon, and EZ mines in Arizona;
- \* the Apex mine in Nevada;
- \* the Goliad in situ leach mine in Texas;
- \* the Palangana in situ leach mine and Hobson processing plant in Texas, where production started in November/December.

In South America:

- \* the Colibri II/III uranium deposit in Peru;
- \* the Sierra Pintada and Huemul mines in Argentina;

In Africa:

- \* Areva's Imouraren uranium mine in Niger, where startup has been deferred and is now expected end 2013;
- \* the Chinese-owned Azelik mine in Niger, where working conditions caused unrest in March and China produced its first overseas uranium in December;
- \* the Adrar Emoles open pit mine in Niger;
- \* the Madaouéla underground mine in Niger;
- \* the Mkulu River uranium project in Tanzania, where production was to start at the end of the year, and Russia's Atomredmetzoloto announced in December to take it over;
- \* the Faléa mine in Mali;
- \* Denison's Mutanga project in Zambia, where mining is to start by 2012;
- \* the Njame uranium deposit in Zambia, where mining is to start "once price behaves";
- \* Areva's Trekkopje uranium mine in Namibia, where death of aquatic life was observed near the desalination plant in April, and where the second stage pilot scale operation was taken into operation in July;
- \* the Etango open pit mine in Namibia;
- \* the Marenica open pit/heap leaching mine in Namibia;
- \* the Husab (formerly Rössing South) dual open pit mine in Namibia, where miscalculations in the EIA report underestimated radon doses by a factor of one million (!);
- \* infrastructure projects for the uranium industry in Namibia, such as two chemical production plants for reagents required for the uranium mining industry, improvements of power supply, and a second desalination plant;
- \* DRDGold's East Rand gold mine in South Africa, where plans for uranium production were put on hold;

In Europe:

- \* the Kurisková mine in Slovakia;
- \* the Salamanca uranium mine in Spain, where a plan for reopening was announced;

In Asia:

- \* the Dornod mine in Mongolia, where Russia's Atomredmetzoloto mysteriously replaced majority owner Khan Resources Inc.;
- \* Areva's Dulaan Uul deposit in Mongolia, where underground heap leach tests started in December;
- \* the Kylleng-Pyndemsohiong-Mawthabah mine project in Meghalaya, India, where the state government is concerned about the negative impacts, while India is no longer in a hurry to mine uranium in Meghalaya, as imports now ease the supply problem;
- \* the Gogi uranium mine and mill in Karnataka, India, for which UCIL seeks clearance and for which it expects not "any significant radiological impact";
- \* the Tummalapalle uranium mill in Andhra Pradesh, India, which is to start operation by March 2011;
- \* three underground mines and a uranium mill in the Lambapur area in Andhra Pradesh, India, for which UCIL is seeking clearances for construction;
- \* Cameco's majority-owned Inkay in situ leach mine in Kazakhstan, where production started;
- \* the Bandar Abbas mine in Iran, where domestic uranium production started, and
- \* the Saghand mine in Iran that is to start operation soon;

In Australia:

- \* the Wiluna, Yeelirrie, and Lake Maitland open pit mines, and Cameco's Kintyre open pit mine in West Australia, where protests against the uranium industry were held at several locations and occasions;
- \* the Oban ISL mine in South Australia, where a uranium field leach trial started;
- \* the Honeymoon in situ leach uranium mine in South Australia, where commissioning began in April;
- \* the Beverley North Extension and Mullaquana in situ leach mines in South Australia.

In Australia's Northern Territory, however, the uranium industry stumbled upon a number of difficulties:

- \* Toro Energy Ltd abstains from the planned acquisition of the Napperby uranium deposit for marginal feasibility;
- \* the Traditional Owner of the Koongarra uranium deposit wants the land comprising the deposit to be added to the Kakadu National Park;
- \* Traditional Owners say, the mining companies are exploiting language barriers; and
- \* the Northern Territory government withdrew the support for the development of the Angela Pamela uranium mine.

#### **Alternate uranium recovery projects**

By-product recovery of uranium from mining primarily for other ores is planned for two projects:

- \* at the Talvivaara nickel/zinc mine in Finland, and
- \* at the Radomiro Tomic copper mine in Chile.

By-product recovery of other elements from mining primarily for uranium, on the contrary, is the goal of technology Toshiba is developing for the recovery of rare earths from uranium in situ leach mining in Kazakhstan.

The recovery of residual uranium from existing uranium mill tailings deposits is planned at four sites in South Africa:

- \* the Mine Waste Solutions Buffelsfontein tailings project, which had its environmental authorization for the planned "super dump" (dam for the secondary tailings left from the recovery process) temporarily withdrawn, and is now to be commissioned by May 2011;
- \* the Rand Uranium Cooke tailings dump project, where one

of several sites considered for a "super dump" was dropped after protests of residents, and the project later was found to be not feasible at current uranium prices;

- \* the AngloGold Vaal River area surface tailings project; and
- \* the Gold Fields Ltd Witswatersrand tailings recovery project;

The recovery of uranium from seawater may become cheaper with a new absorbent tested in Japan.

## ISSUES AT OPERATING URANIUM MINES AND MILLS

### - Planned expansion of existing mines and mills:

- \* Key Lake uranium mill in Saskatchewan, Canada;
- \* North Trend, Three Crow, and Marsland Expansions of Cameco's Crow Butte in situ leach mine in Nebraska, USA;
- \* Denison's Pandora mine in La Sal, Utah, USA, where groups filed a suit to stop the project;
- \* La Sal Mines Complex in Utah, USA;
- \* Rosita in situ leach mine in Texas, USA;
- \* AngloGold's South Uranium plant in South Africa;
- \* Rössing mine in Namibia;
- \* Langer Heinrich mine in Namibia, for which groundwater abstraction cannot supply enough water;
- \* Turamdih uranium mill in Jharkhand, India, where protests lead to the scrapping of a public hearing in October;
- \* Ranger mine in the Northern Territory, Australia, opposed by Traditional Owners;
- \* Olympic Dam mine in South Australia, opposed by environmental NGOs;
- \* Beverley North Extension project of Beverley in situ leach mine in South Australia, got federal and state approval in December;

### - Environmental issues at operating mines and mills:

In Saskatchewan, Canada, environmental monitoring revealed a sharp increase of uranium loads in lake sediments near the Rabbit Lake mine in the years 2007-2008, similar to the increase observed in 2002-2003. The 2009 data showed some decrease, but the uranium loads remained above the "probable effects level".

In Wyoming, USA, Cameco Resources paid a US\$13,000 fine for failure to report an excursion at its Highland in situ leach mine. At the idle Christensen Ranch in situ leach mine in Wyoming, the U.S. NRC requested further groundwater cleanup efforts at inadequately restored mine sections.

In Colorado, USA, Cotter Corp.'s currently closed Schwartzwalder uranium mine was found to contaminate groundwater near a Denver Water reservoir. Cotter Corp. defied state orders to clean up the contaminated mine water and even sued the state over the cleanup order. The state imposed a US\$55,000 penalty, which was later increased by an additional \$39,000. Mining regulators also ordered Cotter Corp. to address heaps of toxic uranium ore at the mine site. Cotter Corp. moreover announced to willfully neglect the EPA requirement to conduct radon measurements at its Cañon City uranium mill tailings impoundment in Colorado. Cotter Corp. apparently is determined to contest Areva's long-held No. 1 rank as the most irresponsible uranium mining company.

The Agency for Toxic Substances and Disease Registry (ATSDR) released a report on health hazards at the residential

area of Lincoln Park near Cotter's Cañon City uranium mill site. The agency found that drinking contaminated private well water over many years may have put some Lincoln Park people at risk for health effects. While most people in Lincoln Park are now on the public water supply and thus no longer exposed, ATSDR recommends that people still using private well water in Lincoln Park stop using it for household purposes.

A citizens group filed a lawsuit accusing Colorado regulators of failing to require Cotter Corp. to set aside enough money to clean up its uranium mill in Cañon City. Colorado Citizens Against Toxic Waste (CCAT) filed the lawsuit in Denver District Court against the state health department and others. It says the department has estimated it will cost at least US\$43 million to decommission and decontaminate Cotter's mill, which is a Superfund site, but the state let Cotter set its financial surety at just \$20.2 million.

The company, on the other hand, disputes a state order requiring Cotter to adjust its US\$2.6 million surety to US\$9.9 million to cover groundwater monitoring at the Cañon City uranium mill site.

In Arizona, USA, mining at Denison's Arizona 1 uranium mine started in January. In May, however, the U.S. EPA said the mine was operating illegally, as the company did not secure the necessary federal approval before ventilating the mine or testing emissions. In June, a court denied a Preliminary Injunction to suspend operations at the mine; environmental organizations had claimed that potential impacts on endangered species had not been considered.

In Brazil, wells near the Caetité uranium mine were closed for excess radiation levels.

In Niger, Areva took action to clean up the radiation spots identified by Greenpeace in the streets of Akokan, near Areva's Akouta underground uranium mine. In September, Niger citizens filed a class action in USA against Areva for damages suffered by the State of Niger and the inhabitants of the area of Niger where Areva operates its uranium mines. On December 17, a dam failure of a retention basin spilled 200 cubic meters of uranium-containing liquids at Areva's Arlit open pit mine in Niger.

In Namibia, experts of the Geologic Survey of Namibia and Germany's Federal Institute for Geosciences and Natural Resources called for an end of groundwater abstraction for the purposes of uranium mining and processing; the experts rather recommend the construction of a second desalination plant.

In November, a railcar destined for the Rössing uranium mine in Namibia spilled sulfuric acid after a derailment.

Uranium miner Paladin Energy Ltd refused the disclosure of its carbon footprint. The company operates the Langer Heinrich mine in Namibia and the Kayelekera mine in Malawi.

In South Africa, a burst of the Cooke gold/uranium tailings dam on December 18 sent toxic mud into the Wonderfonteinspruit river.

In Russia, a court ordered the Krasnokamensk uranium mill to stop local lake pollution. Due to insufficient waste water treatment capacity, the concentrations of zinc, phosphate, phenol, oil products, iron, magnesium, sulphates, nitrates and several other dangerous admixtures exceed the permissible standards.

In Kazakhstan, ranchers complained about the impacts of the Karamurun uranium in situ leach project on cattle. Affected residents in the Shieki region demanded the creation of a commission to investigate the situation.

In India, Uranium Corporation of India (UCIL) was served a notice for illegally drawing river water at its Jaduguda uranium mine in Jharkhand.

In Australia, uranium concentrations in tailings seepage at the Ranger uranium mine in the Northern Territory were 5400 times background, and the regulator says it will be impossible to rehabilitate the site. The reported uranium concentration in the seepage (27 mg/l) is slightly higher than that to be used for a uranium byproduct recovery project in the Talviavaara nickel/zinc mine in Finland (see above) - coincidentally announced the same day...

In June, Energy Resources of Australia (ERA) conceded after two months of denials, abnormal salt levels found in Kakadu creek were caused by the Ranger mine. An ice core from the Antarctic was found to bear traces of uranium that may have been carried by the wind from Australian mines in 1995, according to a glacier expert.

#### **- Miners' health issues at operating mines and mills:**

In Utah, USA, a uranium miner died on May 26 in a rock fall accident in Denison's Pandora mine. The Mine Safety and Health Administration (MSHA) cited the mining company for inadequate worker training and failure to test a tunnel wall for loose rock.

In Malawi, Paladin Energy Ltd ordered miners to work in its Kayelekera mine in spite of shortage of dust masks.

In South Africa, a miner died on November 16 in a fall-of-ground accident at the Ezulwini gold/uranium mine.

In South Australia, workers are exposed to unsafe levels of radiation at BHP Billiton's Olympic Dam mine, according to a company whistleblower. The whistleblower reportedly produced documents that show BHP uses manipulated averages and distorted sampling to ensure the figures are below the maximum exposure levels set by government.

In Australia, the Electrical Trades Union (ETU) in Queensland and the Northern Territory is banning its members from working on uranium mines or within the nuclear energy industry. ETU secretary Peter Simpson says corporate interests and political leaders are trying to bribe workers with the promise of high wages while denying the health risks of uranium mining.

#### **- Other issues at operating mines and mills:**

In Saskatchewan, Canada, a Federal Court dismissed an application by the Athabasca Regional Government to review the license renewal for the McClean Lake mine and mill.

In Wyoming, USA, Uranium One Inc. acquired Areva's idle Christensen Ranch and Irigaray uranium in situ leach mines. Subsequently, a majority in Uranium One Inc. was acquired by Russia's Atomredmetzoloto, making these mines plus the new Moore Ranch in situ leach mine the first Russian-owned uranium mines in the U.S.

In December, the U.S. NRC authorized the restart of the Christensen Ranch/Irigaray uranium ISL mines.

Brazil's minister of defense, Nelson Jobim, rejected IAEA inspections of uranium processing plants and restrictions on

sale of uranium to third countries. The IAEA urges Brazil to sign an additional protocol that imposes controls on the commercialization of uranium and establishes inspection of the processing plants.

In Niger, Areva restarted uranium recovery from low grade ores by heap leaching at its Arlit mine. On September 16, seven foreigners, including one Areva employee, were kidnapped in the uranium mining town of Arlit.

In Namibia, a water crisis in Swakopmund affected also the uranium mines. Paladin Energy Ltd, operator of the Langer Heinrich mine, targets first uranium deliveries to China in 2011. In October, Paladin reported a doubling of the ore reserves at the Langer Heinrich deposit.

In South Africa, the uranium plant at the Ezulwini gold/uranium mine was temporarily closed in August for repair works.

In Kyrgyzstan, the Kara-Balta uranium mill stopped operations because of unstable deliveries of the Kazakh raw material.

In Kazakhstan, Mukhtar Dzhakishev, former head of state uranium company Kazatomprom, was sentenced to 14 years in jail for theft and corruption.

In Jharkhand, India, Uranium Corporation of India Ltd (UCIL) sought assistance against protests from people displaced for the Jaduguda mine: In wake of frequent demonstrations by displaced people seeking compensation in the form of job and financial aid, the UCIL management approached the district administration and sought safety and security help. The agitators often stage dharnas [method of seeking justice by sitting at the door of one's debtor or wrongdoer and fasting until justice is obtained] and demand job and cash compensation from time to time.

In Australia, Energy Resources of Australia (ERA) downgraded the production target for its major Ranger mine from 5240 to 3900 tons, due to "disappointing ore grades".

The breakdown of the Olympic Dam mine ore haulage system in October 2009 caused losses of more than US\$ 200 million; a computer failure was identified as the cause. In July, protesters blocked a road to the Olympic Dam uranium mine.

Participants and observers of a protest at the Beverley uranium mine on May 9, 2000, were awarded compensation; the protesters had been beaten, capsicum-sprayed and locked in a shipping container by police.

## **ABANDONED MINES ISSUES**

In Saskatchewan, Canada, the Canadian Nuclear Safety Commission (CNSC) ordered the Saskatchewan Research Council to assess and eliminate continued safety risks identified during an inspection at the former Gunnar mine site.

In Arizona and New Mexico, USA, plans were prepared to deal with the hazards of at least a few of the many abandoned uranium mines in these states.

Near Johannesburg in South Africa, an announced environmental disaster took its course, when on January 27 acid mine water started overflowing from abandoned West Rand gold/uranium mines. The river of acid mine water threatens, among others, the Cradle of Humankind World

Heritage Site. If no adequate measures are taken by end 2011, acid mine water will start to decant even in central Johannesburg (!).

This is, however, not the only problem left from 120 years of mining in South Africa: tailings seepage is of concern at many sites; an informal settlement was built on radioactive mine waste (!), leading to high radiation exposures of the residents; and a brick factory produces bricks made from radioactive tailings (!).

A surveillance report prepared by the Nuclear Regulator on the radiological impacts of mining wastes in the Wonderfonteinspruit Catchment Area is full of errors and raises many questions.

In Saxony, Germany, cleanup of the 1954 (!) Lengenfeld uranium mill tailings spill started in April. In Thuringia, however, other than in Saxony, there still is no management program for abandoned legacy uranium sites that are not covered by the federal Wismut cleanup program. In view of several incidents, a local environmental group urged the reassessment of the Thuringian legacy uranium sites.

In Ukraine, independent environmentalists detected high radiation levels at an abandoned uranium mine in the Dnepropetrovsk region. The contaminated site is being used for livestock.

In Kyrgyzstan, after two decades of discussions, finally, preparatory work started for relocation of two of the most dangerous tailings dumps at Mailuu Suu.

In Kazakhstan, an analysis of plant samples documented contamination in the surroundings of the former Aktau uranium mines.

In Australia's Northern Territory, a recreation reserve was closed due to radiation from the former Rum Jungle uranium mine.

In New South Wales, the cleanup of the former Hunters Hill uranium mill site located in midst a suburb of Sydney faces indefinite delay; plans to move the contaminated material to a landfill near Penrith have been abandoned after protests from the Penrith Council.

## DECOMMISSIONING ISSUES

In the Northwest Territories, Canada, the cleanup of the former Rayrock uranium mine site was found to be incomplete - 13 years after it supposedly was completed; moreover, the tailings cover was already deteriorating.

In Nebraska, USA, Cameco again requested an enormous extension of the period of groundwater restoration at an exhausted section of its Crow Butte in situ leach mine, extending the period of groundwater restoration to nine years - far beyond the regulatory requirement of 2 years.

In Wyoming, the U.S. NRC approved relaxed groundwater standards at the Split Rock uranium mill tailings site. At the Bear Creek tailings site, uranium concentrations in groundwater were found to exceed predicted values more than tenfold.

In New Mexico, the failed groundwater cleanup at the Church Rock tailings site is nothing but an administrative problem, according to its previous operator United Nuclear: compliance could easily be achieved, if EPA and NRC issued the

requested waivers and alternate concentration limits. At the surface, the company again demonstrated its incapability to even keep the site fences in proper condition, so inspectors had to chase three cows, this time.

At Grants, Homestake offered to plug (!) contaminated private wells near its uranium mill tailings site; and in July, a tailings evaporation pond breached during heavy rains; in September, Homestake had to repair the cover on the side slope of the tailings pile after high rainfall events; and in December, a review report identified numerous deficiencies with ongoing groundwater cleanup at the site.

At the Bluewater mill site, uranium concentrations in a monitoring well are found to be increasing and are expected to exceed the standard soon.

In Colorado, at the disposal site of the relocated Grand Junction uranium mill tailings, the rise of uranium concentrations in groundwater beyond standards did not alarm custodian DOE. Moreover, in Grand Junction, uranium mill tailings underneath roadways still pose a problem. At the Maybell tailings disposal site, during an inspection, another claim stake was found - this time on top of the disposal cell (!), making DOE's efforts to achieve safe disposal for a period of 1000 years look ridiculous.

At the disposal site of the relocated Durango uranium mill tailings, rising uranium concentrations in a monitoring well caused concern; however, the groundwater standard miraculously is no longer exceeded.

At the Old Rifle processing site, the chosen groundwater management strategy of natural flushing turned out not to function as predicted; any alternative approaches still have to be evaluated.

In Utah, the relocation of the Moab uranium tailings is progressing well; it is however feared that the project could lose two thirds of its funding by 2012.

In Arizona, a radiological assessment of stained soils at the former Monument Valley, Arizona, uranium mill site found no elevated risk - if you stay away 99.86% of the time.

In Argentina, the Supreme Court ordered the cleanup of the San Rafael uranium mine site, before mining can restart.

In Gabon, the NGO Brainforest called for an independent study on the radiological situation in Mounana, where Cogéma/Areva mined uranium until 1999. In September, the European Parliament commissioned a study on the use of radioactively contaminated material from uranium mines in building construction in Gabon and Niger. In October, Areva launched the "Mounana health observatory" to study the impact of uranium mining at this site on the health of former workers, in particular.

In Spain, the decommissioning of the Quercus uranium mill was deferred in expectation of a restart.

In France, the inspector of the DREAL authority called for an improvement of the water treatment at Areva's Bellezane tailings site in the Limousin area, where excessive uranium concentrations were found in creeks.

In Romania, an ecological group has initiated some monitoring of uranium mine waste dumps that are still awaiting rehabilitation in the Ciudanovita area.

In Ukraine, the State Nuclear Regulation Committee assessed the technical conditions of the Zheltiye Vody and

Dniprozernyansk uranium mill tailings ponds as satisfactory.

In Australia, a study found that the rehabilitation of the Rum Jungle mine in the Northern Territory has "clearly failed" after just two decades; in particular, the study criticized the exclusion of polluted groundwater from rehabilitation and the poor design, construction and/or performance of engineered soil covers - both leading to increasing acid drainage impacts on the Finns River.

In West Australia, high radiation levels were found at the former Lake Way uranium mine; and, children were found accessing an old uranium site in Kalgoorlie.

## HEALTH IMPACTS: SCIENCE ISSUES

A study found no increase in cancer incidence among residents at the former Homestake Grants, New Mexico, uranium mines and mill other than that attributed to mine work.

A study found decreases in white blood cell counts and alterations in systolic blood pressure among residents in the vicinity of the former Fernald Feed Materials Production Center in Ohio, which functioned as a uranium processing facility from 1951 to 1989.

A study found association between cerebrovascular diseases mortality and cumulative radon exposure in a French uranium miner cohort.

A study found excess chromosomal aberrations in Kazakh uranium mine/mill workers.

## LEGAL AND REGULATORY ISSUES

The Colorado Legislature passed the Uranium Processing Accountability Act that will force uranium mills to clean up existing messes before launching new projects.

The Colorado Division of Reclamation, Mining and Safety (DRMS) approved new rules to protect groundwater during in situ leach uranium mining; these rules carry out state legislation passed in 2008. Powertech Uranium Corp., the proponent of the Centennial in situ leach uranium mine, is suing the state claiming the rules are unlawful and unreasonable.

The U.S. NRC issued a proposed rule to ease restrictions on commencement of construction before a license is issued.

An investigation by journalists revealed that the Texas Commission on Environmental Quality (TCEQ) spent two decades under-reporting radiation levels in local water supplies, which helped water districts avoid fines, but exposed residents to potentially harmful radioactive elements. Hundreds of water providers near the Gulf Coast had delivered drinking water containing radioactive contaminants, all with the blessing of state officials, using a reporting method that came to be known as "Texas math." The TCEQ also regulates uranium mines in Texas.

Zambia has established safeguarding guidelines for uranium and regulations for uranium mining

Namibia's government declared its determination to permit uranium mining in protected areas: Mining Commissioner Erasmus Shivolo said no mines would be prohibited from protected uranium-rich areas given the industry's economic

value.

A Strategic Environmental Assessment (SEA) commissioned by the Namibian Ministry of Mines and Energy calls for a government policy to prevent the Namibian uranium 'rush' from turning into a uranium 'crush'.

In November, Namibia started the development of a "uranium policy" covering not only uranium mining, but the entire nuclear fuel cycle (!); the policy is being developed with assistance from Finland, which has no uranium mines (!).

The government of France plans to weaken the regulatory scheme for uranium mill tailings: deposits of radioactive mining residues, including uranium mill tailings, shall no longer be licensed as "installation nucléaire de base" (INB), but as the less tight regulated "installation classée pour la protection de l'environnement" (ICPE).

The German legislator approved a 10 µg/L drinking water standard for uranium, which is lower than WHO's provisional guideline value of 15 µg/L, but still higher than the 2 µg/L demanded by some environmentalists.

The Slovak parliament, in response to a petition against uranium mining signed by over 113,000 people, finally agreed on legal changes in the geological and mining laws. The changes are giving local communities, municipal and regional authorities more information access and powers to stop or limit exploration of uranium deposits and to stop proposed uranium mining. All 41 municipal authorities influenced by proposed uranium mining already have declared that they do not agree with proposed uranium mining in their territories.

Australia throws a cloak of secrecy over its uranium exports: for the year 2009, Australia for the first time no longer reports the destination of its uranium exports by country; the latest report only shows data by continent: "Individual country information is not provided in order [to] protect commercial confidentiality".

## URANIUM TRADE AND FOREIGN INVESTMENT ISSUES

### - Uranium trade

Canada signed a nuclear agreement allowing uranium exports to India, and Cameco signed an agreement to supply uranium to China.

Kazakhstan signed a nuclear technology and uranium supply pact with Japan, and Kazatomprom signed a uranium supply contract with Chinese companies.

Australia ratified an agreement that allows uranium exports to Russia, but Australia still abstains from exports to India.

France released a report making the material flux of nuclear fuel production more transparent.

The Bern Canton government demanded to establish a legal requirement for full disclosure of the origin of the uranium used in Swiss nuclear power plants, after utility BKW was unable to trace back the origin of the uranium used in its Mühleberg reactor.

According to a report prepared by professional services firm Ernst & Young, bauxite and uranium are the two minerals most affected by fraud and corruption.

### **- Proliferation issues and uranium trafficking**

The Brazilian police discovered 450 kg of contraband uranium ore.

Brazil rejects IAEA inspections of uranium processing plants and restrictions on sale of uranium.

Congo armed groups are forming criminal gangs, trafficking uranium, among others, a UN report says.

DR Congo signed a nuclear proliferation deal with the USA.

Iran assists Guyana with uranium prospection and intends to prospect for uranium in Bolivia.

Iran's 15% stake in the Rössing uranium mine in Namibia is causing headaches in view of the U.N. sanctions imposed on Iran. The mine's majority owner Rio Tinto, however, declared "that it believes to be complying with the current United Nations requirements."

Reporters of a dissident radio station have collected files and photographs which suggest that the ruling junta of Myanmar (Burma) is mining and experimenting with uranium with the aim of one day creating a bomb.

The Indonesia House demanded an inquiry into alleged uranium mining by Freeport in Papua.

### **- Foreign exploration and mining investment and cooperation**

Major uranium consumers without sufficient domestic uranium resources have developed frantic activities to get access to uranium resources abroad:

Russia:

- \* Through the acquisition of Uranium One Inc., Christensen Ranch and Moore Ranch have become the first Russian-owned uranium mines in USA;
- \* Moscow and Ukraine are in talks about a uranium mine project at Novokonstantinovskoye;
- \* Rosatom has applied to develop Namibia's Rössing South (Husab) uranium deposit, although the project is currently owned by Australian explorer Extract Resources Ltd;
- \* Russia and Bangladesh signed an agreement on the exploration and development of uranium deposits, among others;
- \* Russia and China consider the joint exploitation of uranium deposits in Africa;
- \* Russia signed an agreement with Kuwait on nuclear cooperation, uranium exploration and mining;
- \* Russia and Mongolia signed an agreement on the development of the Dornod uranium deposit in Mongolia, although the project is currently majority-owned by Canadian explorer Khan Resources Inc.;
- \* Russia acquired the owner of the Mkuju River uranium project in Tanzania;

France:

- \* Jordan and Areva signed a mining agreement for uranium resources in Central Jordan;
- \* French utility EDF plans a partnership with Russia's Rosatom, including uranium mining;
- \* Areva is interested in developing Tanzania's uranium deposits;
- \* Areva is in talks with DR Congo over possible uranium exploration at Shinkolobwe;

\* France and Mongolia signed an agreement on nuclear cooperation, uranium mining.

India:

- \* Malawi signed an agreement with India on uranium exploration;
- \* India plans to mine uranium in Mongolia;
- \* Russia offered India a stake in the Elkon uranium field;
- \* India is seeking participation in uranium exploration in Namibia;
- \* India's Nuclear Power Corporation and Uranium Corporation is to form a joint venture to acquire uranium mines abroad;

China:

- \* China and Uzbekistan signed an agreement on uranium cooperation;
- \* China and Mongolia signed a Memorandum of Understanding on nuclear power cooperation;
- \* Russia invited China to join the exploitation of Russian uranium deposits;
- \* Russia and China consider the joint exploitation of uranium deposits in Africa;
- \* China's uranium miner CNNC and the China-Africa Development Fund plan to develop uranium resources in Africa;
- \* Marenica Energy Ltd secured key Chinese funding to progress further Feasibility Studies of its Namibian uranium project;
- \* Areva is ready to give Chinese access to the Imouraren uranium mine in Niger;
- \* a Chinese entity takes a controlling stake in the owner of the Kanyika niobium-uranium project in Malawi;
- \* China produced its first overseas uranium at the Azelik mine in Niger;

Japan:

- \* Japan joined a uranium exploration project in Queensland, Australia;
- \* Japanese companies are to participate in the development of uranium deposits in Kazakhstan;
- \* Jordan signed an agreement on nuclear cooperation and uranium exploration with Japan;
- \* Japanese company JOGMEC signed a mineral exploration deal with Tanzania;

Korea:

- \* Korean companies are keen on a stake in the Rössing South (Husab) uranium mine project in Namibia;
- \* Korea Resources Corp signed an agreement on the development of the Valencia uranium deposit in Namibia;
- \* Korea Electric Power Corporation is to invest into the Salamanca Uranium Project in Spain.

Earlier annual mining reviews can be found in Nuclear Monitor issues 702 (2009), 682 (2008), 665 (2007), 650 (2006), 640 (2005), 623 (2004), 600 (2003), 579 (2002), 560 (2001), 540 (2000), 522 (1999) and 504 (1998) or at: <http://www.wise-uranium.org/uissr10.html>

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# AUSTRIA: REFERENDUM ON EURATOM MEMBERSHIP

In January 2007 five organizations expressed their discontent with the role of Austria within Euratom, the European Union's nuclear energy authority. The press conference was held in Vienna with Greenpeace, Umweltbundesamt, Global 2000, Salzburger Plattform gegen Atomgefahr and Atomstopp – and they all demanded that Austria should unilaterally withdraw its membership from Euratom if Austrian politicians are not willing to enforce the Austrian antinuclear consensus within Euratom. "Out of Euratom" became the slogan.

## (722.6112) atomstopp\_Upper Austria -

All five organizations, participating in the "Raus aus Euratom" campaign, agreed: Euratom is undemocratic because it excludes the European parliament from decisions on nuclear issues. Because all struggles for a Euratom revision conference failed, single countries should come up with initiatives to leave the Euratom-treaty.

The Austrian organizations were deeply frustrated that despite the Austrian antinuclear consensus in the population and the legendary fight against nuclear power plants near Austrian borders like Temelin in the Czech Republic, Mochovce in Slovakia or Isar 1 in Germany, the decisions of Austrian politicians in Brussels did not reflect this rejection of the population on nuclear energy.

Anyway – the press conference in January 2007 later turned out to be the beginning of a campaign having lasted now for more than four years, bringing together regional parliaments, municipalities, organizations, churches – with the demand to leave Euratom. So by gaining strength on the one hand, the campaign was more and more discussed, became controversially and was attacked on the other hand. Atomstopp also had to face financial cuts being the driving force behind the campaign.

## The campaign "Out of Euratom"

Starting with five organizations the campaign "Out of Euratom" comprises now 86 organizations with various background: antinuclear, renewable energies, ethics, environment – even the Catholic and the Evangelic Church in Upper Austria gave favorable statements on the campaign – showed solidarity with the demand that Austria should also leave Euratom because the membership of an organization that promotes the nuclear industry is not compatible with the Austrian rejection of nuclear energy. Opinion polls showed that in 2006 63% of Austrian population was in favor of a unilateral withdrawal from Euratom – in

2008 that number already rose to 78%. While 81% disapprove that Austria supports the European nuclear industry financially.

177 municipalities throughout Austria strengthened the campaign "Out of Euratom" by resolutions to the Austrian government saying with the end of the Austrian Euratom membership the financial means formerly spent on the nuclear industry should be transferred to renewable energies.

All nine regional parliaments in Austria treated the Euratom membership in critical resolutions, expressing at least their wish to prepare the requirements for a unilateral withdrawal from Euratom if a Euratom-revision conference is unlikely in the near future.

In the last four years the opposition parties in the Austrian parliament brought eleven (11!) applications on an unilateral withdrawal from Euratom – another eleven (11!) inquiries were addressed by the opposition parties to the Austrian government on the financial aspects of the Euratom membership and the question "how much pays Austria for its nuclear membership"? The Austrian government refused all applications in parliament. Also the inquiries on the financial aspects remained unanswered.

The government did not show any motivation to end Austrian membership of Euratom and did not show any motivation to bring antinuclear aspects to Euratom.

## Position of the Austrian government

Confronted with the demand for a unilateral withdrawal from Euratom, the Austrian government says that (a) a unilateral withdrawal is not possible for legal reasons, (b) will result in a more pro-nuclear Europe as Austria does no longer take part in nuclear decisions, (c) the financial means of Euratom are mainly spent on fusion and safety issues, (d) Euratom covers vital aspects as radiation protection and non-proli-

feration of fissionable material and (e) Austria is and will always be keen on a Euratom revision conference.

These arguments are very weak when analyzing the influence of Austria on the European nuclear policy in the last 15 years. There is already a pro-nuclear Europe – even with Austrian Euratom-membership: the Euratom budget was tripled in 2006 – with Austria's approval! And Austria's representative in Brussels did not hesitate in summer 2010 to give his OK for another 1400 million euro to cover the additional costs for the planned fusion reactor ITER in Cadarache. Austria gave its approval also for weak directives on safety of nuclear installations (2008) and did not show any discontent with the controversial directive on nuclear waste disposal (2010). With Austria's approval 223,5 million euro were granted as a Euratom loan for the completion of the Romanian nuclear power plant Cernavoda (2004) – and by the way: Austria's radiation protection was more rigorous before the Euratom-membership.

For the legal possibility of a unilateral withdrawal from Euratom see: Heinz Stockinger – Euratom: Countries free to step out. (Nuclear Monitor 658, 13 July 2007, p. 4). With the Lisbon Treaty being in force since December 2010 the possibility of a unilateral withdrawal is seen in Art. 50 with a reference to Art. 106a of the Euratom treaty. And those in favor of a Euratom-revision conference have to remember that one single Euratom member state can block any initiative. Who really expects France, or Great Britain, or the Czech Republic to allow any changes of the Euratom treaty as it is still their basis and legitimization for their nuclear programs?

To sum it up: If Austrian politicians made, and encouraged, a strong antinuclear policy within Euratom there would be no need for a campaign like "Austria - Out of Euratom". In such a case, all antinuclear organizations

would be happy with the Austrian politicians and would have supported them in their struggle against the nuclear industry in Europe. Or will this remain a naive dream? Is it realistic to think Euratom will allow antinuclear positions? Is it realistic to hope to change Euratom from inside? Reality – and the experience of the past 15 years - shows a different picture.

#### The referendum

After four years campaigning, there is no sign that the Austrian government is willing to deal with the demand of regional parliaments, with the demand of the opposition parties, with the demand of 86 organizations joining the campaign and with the call from municipalities: "Out of Euratom". A government not willing to meet NGO demands is a very common counterpart and in fact one of the reasons why we work on this topic in the first place, so to stop the campaign, as some suggested, was no option. Atomstopp\_Upper Austria had no choice than to bring the campaign to a next level.

Because the Austrian government continues to ignore the demands of

regional parliaments, organizations and municipalities, it was decided by atomstopp Upper Austria in spring 2010 to start with the preparation-work for a referendum on this issue to bring direct pressure on the government – direct pressure from the Austrian population. Starting the preparation-work turned out to be the end of some funding: one of the organizations stopped financial support for the "Out of Euratom" campaign.

Within a few months it was possible to collect 8.032 signatures (confirmed by municipalities) necessary to launch the referendum. Municipalities were part of this first (launching) phase. In every third municipality in Austria people signed the referendum in this phase. All political parties from the right (freedom party) to the left wing (communist party) supported this phase. Green groups supported it, mayors from the people's party supported it, too. And the socialist party in Upper Austria gave a strong signal: all delegates signed the referendum already in the launching phase, too.

#### 100,000 signatures needed

During eight days between February 28 and March 7, it will be possible throughout Austria to sign the "Out of Euratom" referendum. When the referendum gets more than 100.000 signatures the parliament has again to handle with the demand. With this referendum we want a commitment from the Austrian government to follow the outcome and end the Austrian membership of Euratom. The unilateral withdrawal of Austria from Euratom can be the start of a Europe-wide campaign – with affects on the European nuclear and anti-nuclear policy. Every member state of the European Union should have the choice either to finance nuclear industry via Euratom or finance renewable energies.

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## IN BRIEF

**US embassy cable on Belene.** A US diplomatic cable, originating from the WikiLeaks organisation and published in the Guardian newspaper just before Christmas, relates the serious misgivings of US Ambassador in Bulgaria, Nancy McEldowney, over the planned Belene nuclear power plant in Bulgaria. Commenting in 2009, McEldowney notes that the controversial nuke project, slated for construction in an earthquake zone, "is dogged by cost overruns, financing woes, construction delays, and now serious safety and quality assurance concerns. Belene may end up costing Bulgaria more than money in the long run."

The high-level revelations thus confirm the concerns consistently raised in recent years by campaign NGOs such as the BeleNE! Coalition, CEE Bankwatch Network, Greenpeace, Urgewald, BankTrack and many others in Bulgaria and across Europe. The project-related information described by the US Embassy in Sofia is derived from various sources, including project experts and Bulgarian governmental officials.

The cable also presents the problems experienced by RWE, the German energy utility giant that was involved in Belene as a strategic investor throughout 2007-2009. "RWE is clearly feeling 'buyer's remorse' about its participation in Belene. Belene experts said that RWE remains 'in the dark' on most on-site day-to-day and technical issues. During a late May 2009 Belene project meeting, RWE asked numerous basic questions, indicating that they have not seen any of the on-site safety and environmental reports."

This confirmation about the project's serious shortcomings comes during a period of renewed pressure from the Russian government to speed up Belene's construction. Meanwhile, the British-based bank HSBC has been recently selected as the financial consultant to organise financing for the Bulgarian nuke. In 2009 French bank BNP Paribas pulled out of a similar role following its own fruitless attempts to convince private and public European investors to put up money for Belene.

In parallel, and following invitations from Bulgaria's prime minister Boyko Borisov to invest in Belene, none of the other countries in the region has as yet confirmed their participation. Croatia has already declared no interest, while Serbia and Macedonia await more documents before taking their decisions. The most damning – and credible – Belene documentation looks already to have been delivered.

**The Guardian (UK), 20 December 2010**

## WISE/NIRS NUCLEAR MONITOR

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

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

### Receiving the WISE/NIRS Nuclear Monitor

US and Canada based readers should contact NIRS for details of how to receive the Nuclear Monitor (address see page 11). Others receive the Nuclear Monitor through WISE Amsterdam.

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