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YUCCA MOUNTAIN PROJECT "GOING FOR BROKE" IN LAST YEAR OF BUSH PRESIDENCY

For over a year and a half, the Bush Dept. of Energy (DOE) has vowed to file its long-delayed Yucca Mountain repository license application to the U.S. Nuclear Regulatory Commission (NRC) by June 30, 2008. If, at the end of the three to four year long proceeding that would then follow, NRC approves the application, then DOE could construct and operate the national dumpsite for irradiated nuclear fuel and high-level radioactive waste.

(665.5851) Beyond Nuclear - DOE's rush to file its application this year is clearly an attempt to initiate the Yucca licensing proceeding while the adamantly pro-dump, Republican President George W. Bush still occupies the White House. Every Democratic candidate for the Oval Office has now expressed strong opposition against the Yucca dump (perhaps because Nevada has an early presidential candidates caucus, on Jan. 19), while Republican candidates, like the departing Bush, favor the dump. Thus, pro-dump forces in government and industry have thrown their efforts into high gear, hoping to steamroll opponents in 2008, before an anti-dump Democratic President potentially enters the White House on Jan. 20, 2009. NRC - despite claiming it will be a neutral, un-biased, and objective judge of the DOE's license application - has shown its true colors in recent months.

Most significantly, in December NRC's Atomic Safety Licensing Board (ASLB) ruled against a State of Nevada motion calling for a delay in the proceeding. Nevada argued that DOE's document collection in support of its proposed dump is far from complete, as required by law six months before its license application. This six month period would serve as discovery in this highly complex technical-legal battle, giving Nevada and other dump opponents time to study DOE's documents and prepare legal contentions. But despite its data base containing nearly four million documents, totaling over 30 million pages, DOE has withheld many key documents. These include the final repository design, as well as the results of its "Total System Performance Assessment," a highly complex computer model that shows just how bad radiation releases to the environment will be over time. Also missing are seismic analyses concerning earthquake fault lines located directly beneath surface facilities for handling and storing wastes. ASLB ruled in Nevada's favor in 2004 when DOE attempted to initiate the license proceeding by filing a half-baked document submission, setting Yucca back years. But this time, ASLB took only a week to return a ruling against Nevada, allowing DOE to continue on towards its June 30 goal of submitting its application.

MONITORED THIS ISSUE:

YUCCA MOUNTAIN PROJECT "GOING FOR BROKE" IN LAST YEAR OF BUSH PRESIDENCY	1
URANIUM MINING ISSUES 2007 REVIEW	2
U.S. CONGRESS APPROVES \$18.5 BILLION IN LOAN GUARANTEES FOR NEW REACOR CONSTRUCION. DIDN'T IT?	11
IN BRIEF	13

Latest news

On January 14 DOE announced that its June 30, 2008 target date for filing the Yucca license application to NRC will not be met. This is due to budget cuts to the program.

The DOE said that it still will try to get the license application in by the end of 2008, but missing the summer target is clearly a big deal -- DOE has put a lot of devotion into its June 30 target date.

In November, NRC rejected - for now - Nevada's challenge that DOE and its primary scientific contractor, Sandia National Labs in New Mexico (itself closely affiliated with DOE), is placing a rushed schedule ahead of public safety. And in October, NRC rejected - for now - Nevada's objection that DOE is now eyeing Yucca for dumping 130,000 metric tons of waste, nearly twice the amount allowed in the Nuclear Waste Policy Act. That law states that no more than 70,000 metric tons of high-level waste can be buried in the first repository, at least until a second repository is opened, this time in the eastern U.S. In fact, by 2010 DOE is supposed to report to the President and Congress on the need for a second repository. DOE has used this impending report to pressure eastern states and their congressional delegations to support the Yucca dump, lest DOE consider their state for the second dump. Of the 70,000 metric tons of waste initially targeted at Yucca, 63,000 would be commercial waste (the other 7,000 nuclear weapons waste). Ironically, that much commercial waste will exist by 2010. Thus, Yucca will already be full, long before it could ever open. DOE still optimistically clings to a 2017 to 2021 opening date, although skeptics even within the nuclear establishment think opening will be delayed beyond 2025. This would contradict the NRC's "Nuclear Waste Confidence Decision" (which holds that a dump will be open by 2025), the justification NRC uses to reject any challenges to old or new reactor operating licenses that have to do with high-level radioactive waste having no place to go.

Dump opponents are fighting back, however. While Nevada prepares its legal intervention against DOE before NRC's ASLB, U.S. Senate Majority Leader Harry Reid (Democrat-Nevada) managed to slash Yucca's budget by over US\$100 million (67 million euro) in Fiscal Year 2008. The Bush DOE had requested US\$494.5 million from Congress, but Reid cut that by 22%, to US\$386.5 million. DOE officials responded by warning that this may prevent them from actually filing the license application during Bush's remaining presidential term. This is significant, because Democratic presidential candidates, such as Hillary Clinton, have pledged to kill the Yucca dump once in office. How they could actually do that if the Yucca licensing proceeding is already under way is unclear, hence the struggle to start, or block, the proceeding by dump proponents, and opponents, in 2008. Unfortunately, the omnibus appropriations bill that slashed Yucca's budget also contained language ordering DOE to establish "regional interim storage" for commercial wastes from shut down reactors at selected operating commercial reactors, DOE facilities, or other "volunteer" sites. Such a proposal for "parking lot dumps" and the rushed initiation of large-scale waste transportation by road, rail, and waterway was beaten back by over 150 environmental and public interest groups in late 2006. They advocated instead "Principles for Safeguarding Nuclear Waste at Reactors." (see <http://www.citizen.org/documents/PrinciplesSafeguardingIrradiatedFuel.pdf>) The nuclear utilities continue to

pressure the federal government to start hauling away the wastes from their reactor sites by suing for "damages," since DOE did not begin taking the wastes away in 1998 as mandated to by the Nuclear Waste Policy Act. U.S. taxpayers could pay \$500 million to a billion dollars in damages each and every year for this "breach of contract," thus making the waste dilemma highly profitable for utilities, at taxpayer expense. On Jan. 10, scores of groups filed comments with DOE opposing Yucca as part of the latest Environmental Impact Statement proceedings. Beyond Nuclear spearheaded comments (viewable at www.beyondnuclear.org) signed by a dozen national groups, as well as 68 grassroots groups from 27 different states. In addition, comments strongly opposing the dump were also filed by Nevada, as well as such other groups as Alliance for Nuclear Accountability, Nevada Nuclear Waste Task Force, Healing Ourselves and Mother Earth, and (California's) Alliance for Nuclear Responsibility. Ian Zabarte of the Western Shoshone National Council charged DOE with "environmental racism" for targeting the Indian tribe's sacred homeland with radioactive waste dumping, in violation of the "Peace and Friendship" Treaty of Ruby Valley signed by the U.S. government in 1863.

Sources: Las Vegas Review Journal, <http://www.reviewjournal.com/news/yuccamtn/>

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URANIUM MINING ISSUES 2007 REVIEW

For the 10th 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 aspect of uranium mining: price, mines, exploration, environment issues, indigenous people, production and so on.

(665.5852) WISE Uranium Project - During the first half of the year 2007, the uranium spot price climbed further, from US\$72.00/lb U3O8 to an unprecedented peak of US\$136.00/lb in June (1 dollar = 0.67 euro -15 Jan. 2008). It then declined - for the first time in 47 months - reaching a low of

\$75.00/lb in October. Towards the end of the year, it recovered to US\$90.00/lb. These are the price estimates given by Ux Consulting Company, LLC (UxC); the estimates provided by Tradetech LLC differ slightly. In spite of the tight uranium market, world uranium production decreased by

5% to 39,655 t U in 2006, due to various problems at producing mines and the long timespans required for the development of new mines (2007 figures are not yet available). Production continued to be lower than the actual demand, the balance being supplied by various stockholdings.

The number of uranium mining and exploration companies listed on the WISE Uranium Project website increased by 65% from 570 to 940 during the course of the year.

Uranium exploration projects

In most cases, new exploration efforts are aimed at areas where exploration was halted after the sharp fall of the uranium price in the early 1980s. So, these efforts are mostly looking into low grade deposits that did not warrant further exploration (not even speaking of mining) during the depression of the uranium price. Therefore, useful results likely will be obtained in rather short time, which is an important factor for the many new start-up exploration companies, but the development of these deposits is vitally dependent on the uranium price remaining on a high level, and there is only little chance for the discovery of new deposits with this approach.

Moratoria

In some cases, exploration even takes place in areas where mining is not allowed. This only makes sense, if the companies assume that the policies of the respective governments will change in the near future:

- In the Canadian province of Nova Scotia, there exists a moratorium even on the *exploration* of uranium, so any company interested in uranium has to pretend to search for some other mineral; if it finds uranium concentrations of more than 100 ppm, it must stop its activities. Capella Resources Ltd., with its subsidiary Tripple Uranium Resources Inc., is currently trying to perform this delicate exercise, suspiciously watched by government and residents. In December, the company said the results were still pending for 9 holes drilled in the Wentworth area in July...
- In the U.S. State of Virginia, there is a moratorium on uranium mining in existence for 25 years. This does not deter Virginia Uranium Inc. from starting exploration on the Coles Hill deposit which is said to be "the largest known untapped uranium deposit in the United States".

- In Australia, the Labor Party scrapped its long-standing ban on new uranium mines in April; but the state governments of West Australia and Queensland continue their opposition against the permitting of new mines. Nevertheless, companies are intensifying their exploration efforts in these states, assuming that their lobbying efforts will ultimately result in the states lifting their ban on new uranium mines. Paladin Energy Ltd, owner of one half of the Valhalla deposit in Queensland, even spent A\$1 billion (US\$900 million) in an attempt to acquire the other half of the deposit (the attempt turned out to be not a complete success, though).

New policies

The current rush for uranium exploration licenses has put a number of - in particular African - countries in a comfortable position: industrialized nations are lining up to compete for the access to their uranium resources. In view of the current rush, several countries are changing their policies for granting such licenses now:

- After having granted uranium exploration licenses to a multitude of exploration companies, Namibia, in February, placed a moratorium on granting further licenses, until a new policy will be developed.
- Niger, where so far uranium was exclusively mined by subsidiaries of Areva (based in former colonial power France), granted new exploration licenses to a number of companies from other countries, to break the French monopoly.
- In Uganda, President Yoweri Museveni has ordered the Ministry of Energy to halt giving out concessions for the exploitation of the newly found uranium deposits in the country.

Indigenous people

Often, uranium exploration projects concern indigenous people living in the area and/or Traditional Owners of the sites. In some cases, the communities are divided over the expected positive effects of economic development vs. the anticipated environmental and long-term impacts. Many indigenous

communities have developed a highly critical, or at least cautious attitude towards the projects:

- In the Northwest Territories (Canada), the Mackenzie Valley Environmental Impact Review Board opposed uranium exploration proposed by Ur-Energy Inc. at the Screech Lake property in the upper Thelon watershed for adverse cultural impacts of a cumulative nature (in combination with other developments) to areas of very high spiritual importance to aboriginal peoples. The Federal Minister of Indian and Northern Affairs upheld the contested decision of the Review board.
- In eastern Ontario (Canada), the Algonquin First Nation, along with non-natives, occupied a proposed uranium mining site in Northern Frontenac County in June. They left the site only in October, after receiving a court injunction. Their struggle continues in the courts.
- In northern Québec (Canada), Inuit and environmental organizations opposed uranium exploration and mining near the proposed Kuururjuaq Park in Nunavik.
- In northern Labrador (Canada), aboriginal groups living near the proposed Michelin uranium mine site raised concerns about the project's impacts; Labrador Inuit pondered a ban on uranium mining.
- In Nova Scotia (Canada), a native leader called for a permanent ban on uranium mining, fearing that the provincial government might lift the current moratorium.
- In South Dakota (USA), an Oglala Sioux Tribal judge excluded a uranium company from Pine Ridge reservation. Also in South Dakota, an Indian treaty rights group challenged a uranium exploration permit to Powertech Uranium Corp. in the Black Hills. A federal judge denied the challenge.
- In New Mexico (USA), the Navajos continued their long-standing fight against HRI's uranium in-situ leach mine project in Churchrock/Crownpoint, by filing a petition against the project, holding protests at a public hearing, and demanding a federal moratorium on uranium mining. And, also in New Mexico, the All Indian Pueblo Council

adopted a resolution against resumption of uranium mining in the Mt. Taylor area for cultural and environmental reasons.

- In Meghalaya (India), a majority at a public hearing said no to uranium mining in the West Khasi Hills. Later, the Indian Environmental Ministry granted environmental clearance for the project; the decision on the license now is a matter of the state.
- In Andhra Pradesh (India), a tribal organization demanded the stop of a uranium mining project in Nalgonda district, since the project would deprive the Adivasis of their right over the local natural wealth.
- In the Northern Territory (Australia), the only one Traditional Owner said No to any mining of Areva's Koongarra uranium deposit in Kakadu park. And, also in the Northern Territory, Rio Tinto pledged to wait for Traditional Owners' consent on the mining of the Jabiluka deposit.

In a few cases, though, indigenous people welcomed the development of new uranium mines, or, want to profit from the expected economic boost, at least:

- In Nunavut (Canada), an Inuit organization reversed its ban on uranium mining on Inuit-owned land, allowing for Areva's Kiggavik mine project near Baker Lake to proceed. The Baker Lake, Rankin Inlet, Repulse Bay and Arviat hamlets have all passed motions supporting uranium development.
- In Niger, one person was killed and several wounded in a raid at the Imouraren uranium prospection camp; the gunmen called for the proper implementation of a 1995 accord which ended a Tuareg rebellion by promising the tribesmen priority in jobs with local mining companies.
- In Western Australia, the Western Desert Lands Aboriginal Corporation approved uranium exploration on Aboriginal land; and, the Martu aboriginal people sought stakes in potential uranium mining projects, including Rio Tinto's Kintyre venture.

Environmental Protest

Protest from environmentalists and

residents was voiced against various uranium exploration projects, as for example:

- the construction of a winter road for Cash Minerals' uranium exploration project in the Wernecke Mountains of Yukon (Canada),
- the uranium exploration permits issued for areas regarded as caribou calving grounds in Nunavut (Canada),
- Powertech's Centennial project in northern Colorado (USA),
- Virginia Uranium's Coles Hill project in Virginia (USA), and
- various uranium exploration sites in Jämtland (Sweden), among others.

Applications for uranium exploration licenses were denied in several cases: in Donegal (Ireland), in Billingen (Sweden), and at several sites in Finland.

Uranium mine development projects

Since the beginning of the new uranium boom, there has not been enough time yet to discover and delineate any new deposits with the reliability required for the initiation of a mining operation. The operations being started now (in addition to long planned projects) rather involve either the revival of historic mining sites, or the development of known low grade deposits so far not feasible for mining. The current rush for uranium leads to the development of new projects in countries that do not have an **adequate regulatory regime** for the uranium industry. This does not only concern countries, such as Malawi, that had not seen uranium mining before, but also, for example, Namibia: after decades of ongoing uranium mining in the country, the Namibian Chamber of Mines only now plans to develop radiation and environmental standards for uranium mines; apparently, Rio Tinto's Rössing mine used to be "self-regulated", so far. Particularly disturbing is the high speed at which countries such as Namibia and Malawi are licensing new uranium mines; a process that elsewhere takes years is completed here within months; moreover, the public involvement process is conducted by the applicant, rather than the regulator. This leaves only rudimentary opportunities for

stakeholder involvement. For example, there was a comment period of just two weeks conceded for the Draft Environmental and Social Impact Assessment Report for Uramin's Trekkopje Uranium Project in Namibia. Obviously, Uramin's new parent company Areva had no scruples about taking advantage of this very special Namibian regulatory regime. But, even in countries such as the United States, there are efforts underway to fast track the licensing of new uranium projects: the U.S. Nuclear Regulatory Commission (NRC) prepared a Generic Environmental Impact Statement (GEIS) for uranium recovery operations, to simplify the licensing process for in-situ leach uranium mines and for uranium mills. This proposal provoked an outrage among environmental NGOs, and even the New Mexico Governor blasted NRC's efforts and called on NRC to abandon the GEIS plans.

In dry areas, **access to water** is becoming a major, if not the main factor for the development of uranium mine projects. In Namibia, local water supplier NamWater could provide only the water required for Paladin's new Langer Heinrich mine. All further uranium mine projects will have to install desalination plants at the coast to meet their freshwater demand. The demand of 20 million cubic meters per year for Uramin's Trekkopje mine project alone is higher than that of all other consumers in the area combined. Concerns were raised about the impacts of the desalination plant on sea life, and of the impacts of the necessary pipeline on the unique lichen fields found in the area, among others. But, while the public involvement process still was ongoing, Uramin already commissioned the desalination plant. Uramin's parent company Areva not even sees the necessity to submit to this rudimentary regulatory regime. In South Australia, water supply is becoming an issue for the proposed expansion of the Olympic Dam copper/uranium mine: BHP Billiton has been challenged by the fishing industry, scientists and environmentalists to justify its selection of the shallow, tidal Spencer Gulf for the massive desalination plant. In several cases, the development of new uranium mine projects is proposed

in areas where **legacies from the historic uranium boom** have not been cleaned up yet, or, where, at best, reclamation has just (more or less) been completed, for example in Elliot Lake, Ontario (Canada), or at the Ambrosia Lake mill site, New Mexico. At Maybell in Colorado, there even were claim stakes found on the Department of Energy's (DOE) uranium mill tailings disposal site, posted by overkeen uranium prospectors; this is particularly embarrassing for the DOE, as the tailings pile was meant to have been managed to assure safe disposal for a period of 1000 years. Further examples are in Pécs, Hungary, where Australian-owned WildHorse Energy wants to restart uranium mining in a former Cold War era uranium district, and the Sierra Pintada mine at San Rafael in Mendoza, Argentina, where stakeholders are demanding that the legacy of the former mining operation is cleaned up first, before any new mining can be allowed.

Current development projects

In Canada, the development of the following mine projects is underway or being prepared:

- In Nunavut, Areva and its joint venture partners decided to proceed with the feasibility study and to initiate the approval process for their Kiggavik mine project near Baker Lake.
- In Saskatchewan, the Environmental Assessment process for the Midwest uranium mine project is continuing; the project partners decided to proceed with the development of the project. The production startup date for Cameco's Cigar Lake uranium mine was further delayed to 2011, at the earliest, due to the flooding of the mine after water inflow. Areva and UEX Corp. plan a 950 m deep exploration shaft at Shea Creek. The Canadian Nuclear Safety Commission (CNSC) approved the Environmental Assessment Guidelines for the proposed mining of the new Caribou ore body at the existing McClean Lake mine.
- In Ontario, Pele Mountain advanced the Mine Planning Studies on its Elliot Lake mine project, and Denison Mines Inc. considers reopening of its Elliot Lake mines.

In the United States, first license applications for new in-situ leach uranium mines have been filed with the Nuclear Regulatory Commission (NRC) after almost two decades:

- In Wyoming, Energy Metals Corp. submitted a license application for the Moore Ranch in-situ leach uranium project. Ur-Energy Inc. submitted a license application for the Lost Creek uranium in-situ leach mine. Uranerz Energy Corp. submitted a license application to construct and operate the Nichols Ranch and Hank in-situ leach uranium facilities. COGEMA Mining, Inc. (now Areva NC Inc.) requested the reversal of the license for its Irigaray/Christensen Ranch in-situ leach facilities from decommissioning to operating status.
- In Texas, a subsidiary of Energy Metals Corp. filed a license application for its La Palangana in-situ leach uranium mine. Uranium Energy Corp. submitted a mine permit application for the Goliad uranium in-situ leach mine. Earlier, the company had received a notice of violation for failure to reclaim its uranium exploration drill sites.

Further plans to submit license applications for uranium mines in the U.S. have already been announced:

- Powertech Uranium Corp. initiated the permitting process for its Centennial in-situ leach and/or open pit uranium mine project (Colorado).
- Public scoping was held for Energy Fuels Resources Corp.'s proposed reopening of the Whirlwind uranium mine (Colorado). A decision on the project is anticipated in the first quarter of 2008.
- Strathmore filed a Notice of Intent to file a license application for the Roca Honda uranium in-situ leach mine and/or conventional mine and mill project (New Mexico).
- Strathmore initiated the permitting activities for the Sky in-situ leach project (Wyoming).
- Uranium Power Corp. commissioned a preliminary feasibility study for the proposed reopening of the Sheep Mountain mine (Wyoming).
- Wildhorse Energy Ltd announced the receipt of a positive Scoping Study for its Bison Basin uranium in situ-leach project (Wyoming).

- The U.S. NRC held a hearing on Powertech Uranium Corp.'s Dewey/Burdock in-situ leach uranium mine project (South Dakota). Powertech Uranium Corp. apparently plans to mine the Dewey/Burdock uranium deposit by the *acid* in-situ leach technique. This would be the first commercial ISL site to be mined with acid in the United States. Groundwater restoration after acidic in-situ leaching is even more challenging than after carbonate in-situ leaching.

Uranium ore mined in conventional mines has to be processed in a uranium *mill* to extract the uranium. At present, there is only one uranium mill active in the USA, Denison Mines' White Mesa Mill in Blanding, Utah; intermittently, it processes small batches of ore and of alternate feed material. In view of the new uranium boom, Denison now offered toll milling services for smaller uranium mines, but, in spite of the high market price for uranium, the cost turned out to be prohibitive for many potential customers, mainly for the high transport cost from the remote mines to the mill. Therefore, several proposals are now being made for the reopening of the idle and mothballed mills still in existence, and even for the construction of new uranium mills: License applications for new uranium mills filed in the U.S.:

- Uranium One Inc. filed a license application and environmental report for the reopening of the Shootaring Canyon (Utah) uranium mill it had acquired from U.S. Energy Corp. earlier. Later, Uranium One Inc. even acquired the whole Ticaboo townsite near the idle mill.

Further plans to submit license applications for uranium mills in the U.S. have been announced:

- Rio Tinto has decided to withdraw the Sweetwater (Wyoming) uranium mill from sale in order to re-evaluate whether it should be retained and developed.
- Energy Fuels Inc. announced the intention to construct the new Piñon Ridge uranium mill west of Naturita (Colorado). Energy Fuels Inc. frankly hailed the fast-tracking of the licensing process by State regulator

Colorado Department of Public Health and Environment (CDPHE) rather than having to deal with the federal Nuclear Regulatory Commission (NRC); Colorado is an Agreement State, to which NRC relinquishes the authority to license uranium mills.

- Anderson Mining Company is planning a new uranium mill for the Anderson mine in western Arizona.
- Rio Grande Resources Corp. plans a new uranium mill project in the Grants Mineral District (New Mexico).
- Uranium Resources, Inc. plans to acquire the former Ambrosia Lake uranium mill site to construct a new uranium mill (New Mexico).

In addition, the following mining permits have been issued in the U.S.:

- An operating permit granted for the Tony M uranium mine in Ticaboo, Utah, and
- a permit for the Reynolds Ranch uranium in-situ leach site as a satellite facility of Smith Ranch-Highland Uranium Project (Wyoming), among others.

In Mendoza, Argentina, the wine producers of San Rafael summoned an investigation on the impacts of the proposed Sierra Pintada uranium mine on their product; later, a judge prohibited works preparing production at the mine site.

Calypso Uranium Corp. filed claim to set aside an anti-mining law in Mendoza Province.

Thousands protested in the city of Tinogasta to protest against uranium mining projects in the west of Catamarca province.

In the Czech Republic, a demonstration was held against the proposed mining of the Osecná-Kotel uranium deposit in North Bohemia.

The proposed mining of the Kurišková/Jahodná uranium mine project in Slovakia prompted Greenpeace to hold a protest action at Tournigan Gold Corp.'s annual meeting in Vancouver, Canada.

In Hungary, the Environment Ministry raised concern over the proposed re-opening of mines in Southern Hungary.

Ukraine plans to develop the Novokonstantinovskoye uranium field.

In the Central African Republic, Areva's subsidiary UraMin Inc. plans to build

the Bakouma uranium mine.

In Namibia, Paladin's Langer Heinrich uranium mine was officially opened in March.

Areva's subsidiary Uramin Inc. plans to mine the Trekkopje deposit by shallow open pit mining in combination with heap leaching. A draft version of the Environmental and Social Impact Assessment Report for Trekkopje Uranium Project was made available for comment.

Forsys Metals Corp. plans to mine the Valencia deposit in a giant open pit mine; the mining license application was lodged in November.

A scoping study confirmed the viability of a large scale uranium mine at Bannerman Resources Ltd's Goanikontes deposit.

Extract Resources Ltd. announced a positive preliminary scoping study for the Ida Dome prospect, for which not even a mineral resource has been defined.

In Malawi, Paladin obtained a mining license for the Kayelekera uranium mine project. Several NGO's filed legal action against the mine project and called for a halt of the mine development, until the legal challenges are concluded.

Zambia plans to open a uranium mine in Siavonga, Southern Province. A pre-feasibility study started on the Njame North uranium mine project.

In Niger, a Chinese-owned mining company was granted a mining license for the Azelik uranium deposit, and an Indian company was granted a uranium exploration and mining permit in the Arlit region.

In DR Congo, Brinkley Mining PLC signed a contract for a uranium exploitation venture.

In South Africa, processing of uranium commenced at the Dominion Reefs project; Areva's subsidiary Uramin Inc. plans to build the Ryst Kuil uranium mine; DRDGold formed a Joint Venture to reopen idle gold mines to dig for uranium; production from First Uranium's Ezulwini mine is expected to begin in June 2008; and Harmony Gold announced to revive uranium production at the Cooke Section mine, Randfontein.

In Andhra Pradesh (India), the uranium mine and mill at Tummalapalle, Cuddapah, received approval.

In Jharkhand, Uranium Corporation of

India (UCIL) sought police help as displaced people disrupted work at the Bandugurang open pit uranium mine project. The Bandugurang mine and the Turamdih uranium mill were inaugurated, and the capacity of the Jaduguda uranium mill was increased by 74%.

In Meghalaya, road blockades and a 36-hour general strike were held against a proposed uranium mine. In December, the project was granted environmental clearance; the final decision is to be issued by the state. Pakistan prepared a \$600 million plan for exploring and mining uranium deposits.

In Russia, Techsnabexport announced to develop 8 uranium deposits in South Yakutia; uranium mining at the Elkon deposit in Yakutia is to start in 2012-13. In Kazakhstan, pilot production was to begin at the West Mynkuduk in-situ leach uranium mine project.

In South Australia, Curnamona Energy Ltd. announced a field leach trial at its Oban property; the startup of the Honeymoon in-situ leach uranium mine was delayed further; and a Pre Feasibility Study and Environmental Impact Study was commissioned for the proposed Mt Gee uranium mine.

In Western Australia, Rio Tinto began work on a new pre-feasibility study for the Kintyre uranium mine project.

In Queensland, development studies of the Ben Lomond mine project commenced; a scoping study showed the economical viability of the Westmoreland uranium mine project; a Sino-Australian company joined uranium exploration projects in Queensland.

Alternate uranium recovery projects

Uranium ore is not the only resource suitable for extraction of uranium.

Another resource are various **waste materials generated by the nuclear industry**, as they continue to be processed by Denison Mines' White Mesa uranium mill in Utah (USA). Kennecott now also plans to process such "alternate feed material" at its currently idle Sweetwater mill in Wyoming, but was denied the right to store such material on site for later processing, without license amendment.

While such alternate feed processing continued during the depression of the uranium market, a number of other resources are now gaining attention, as the market price has increased: One of them is uranium contained in **phosphate rock**. There used to be a number of uranium extraction plants associated with phosphoric acid production plants in the U.S. (in Florida and Louisiana), but all of these became unviable with the decline of the uranium price and have been shut down and dismantled. Meanwhile, Florida's phosphate industry is studying the feasibility of a resumption of uranium extraction from phosphate rock. And, French nuclear firm Areva announced to study the feasibility of uranium extraction from phosphates in Morocco. Indústrias Nucleares do Brasil (INB) plans to mine the Santa Quitéria deposit in Ceará state (Brazil), for phosphate and uranium; for the project to become viable, INB needs to get a uranium export clearance, since the uranium production would exceed the domestic demand. Another resource for uranium considered from time to time are the **gold tailings** in South Africa. During times of a high uranium price, uranium used to be extracted as a by-product in the South African gold mines, but during the depression of the uranium market, the uranium recovery circuits were mostly shut down. So, most of the uranium went to the tailings dams in the last years, but their uranium concentrations still are very low. Therefore, earlier assessments showed that a uranium extraction from those tailings would not be viable; but now, the situation has changed: AngloGold offered to process waste containing uranium for rivals; Mintails announced an inferred uranium resource for recovery from the West Rand gold tailings; DRDGold Ltd announced "encouraging" uranium concentrations in the Blyvooruitzicht gold tailings; Harmony Gold announced to initiate re-mining of the tailings dams in the Randfontein area for uranium and gold, consolidating the tailings in a new "megatailings" dam; First Uranium Corp. announced to immediately start construction of a uranium recovery plant from the Buffelsfontein tailings; and, Mintails Ltd and DRDGold Ltd announced a Joint Venture project for

uranium recovery from the East Rand gold tailings.

Uranium mine waste rock as a further resource for uranium recovery is being investigated by Uran Ltd at the Příbram uranium mine waste dumps in the Czech Republic.

The recovery of uranium from **coal ash** is being tested by Sparton Resources Inc. in China, and, in a Joint Venture with Wildhorse Energy Ltd, in Hungary.

Issues at operating uranium mines

Life extension of operating uranium mines

In view of the high market price for uranium, further mining of low grade ores has become viable at several existing mines that otherwise were scheduled for shutdown for exhaustion of the ore deposit:

The Czech cabinet has approved the continuation of uranium mining at the Ro ná mine for as long as it will be profitable, which might be until 2012, according to the latest estimates. In Namibia, Rio Tinto extends the Rössing mine life further to 2021. In Australia's Northern Territory, Energy Resources of Australia (ERA) plans to extend the mine life of the Ranger mine to 2012.

Planned production increases at operating uranium mines

In addition, production increases are planned at many existing mines: Cameco announced that it is targeting to increase the combined production at its Crow Butte (Nebraska) and Smith Ranch-Highland (Wyoming) in-situ leach operations by 70% to 1,769 t U annually by 2011. The planned production increase requires the restart of the idle Highland uranium recovery plant. Cameco already received permission for an increased plant throughput at its existing Crow Butte in-situ leach mine. For the proposed expansion of the same mine, however, the State denied the required aquifer exemption, and seven petitioners filed for hearing. For a proposed in situ leach satellite facility at Smith Ranch, the Nuclear Regulatory Commission (NRC) issued an Environmental Assessment.

Indústrias Nucleares do Brasil (INB) plans to double production from the Caetité uranium mine (Bahia) to 800 t by 2011.

Ukraine plans to achieve self-sufficiency in uranium by boosting annual uranium production from the current 800 tons to 2,500 tons by 2013. Niger plans to triple its annual uranium production from 3,500 to 10,500 tonnes a year in the next few years.

In Namibia, Rössing raises its annual production target to 4,500 t U₃O₈ (3,816 t U).

Kazakhstan planned to increase uranium production by 31% to 6,937 tons in 2007 from the previous year. Cameco and Kazatomprom announced to double the future production of the Inkai in-situ leach mine to 4,000 t U "on a timeframe to be confirmed".

In Russia, the Dalmatovskoye in-situ leach mine plans to double the annual uranium production to 640 metric tons by 2010. Uranium production in the Krasnokamensk area is to be raised from 3160 to 5000 t/a U in 2015.

In South Australia, BHP Billiton considers export of *unsmelted* Olympic Dam copper/uranium concentrate to China: In view of the huge cost of the planned expansion of the Olympic Dam mine on the one hand, and of China's expected serious over-capacity of copper processing on the other hand, BHP has asked the Australian Government to approve the export of uranium-bearing copper concentrate to China. Export of the concentrate rather than copper metal would mean that BHP would have to expand the Olympic Dam mine only, but not the on-site smelter. BHP would directly ship up to 1.2 million tons of Olympic Dam copper concentrate a year, rather than convert the ore into metal at the mine site. This concentrate would contain up to 2,500 tons of uranium each year. It is not yet clear whether BHP would propose, or be required, to repatriate that uranium. Any sale of the uranium to China's nuclear industry would first require the finalization of the bilateral safeguards agreement which is part of the Australia-China Nuclear Transfer Agreement signed in April 2007.

Production setbacks experienced at operating uranium mines

Due to a number of technical issues, Areva had to lower the 2007 production estimate for the McClean Lake mine (Saskatchewan) to 692 t U, a reduction from the previously reported level of 846 - 1154 t U.

In November and December, mining at Rabbit Lake (Saskatchewan) had to be slowed down due to increased water inflow.

A fire at a sulfuric acid plant affected uranium production in Kazakhstan's in-situ leach uranium mines in November and December.

In India, a delay in commissioning of the Jaduguda (Jharkhand) mill expansion lead to further fuel shortage at India's nuclear power plants.

Heavy rainfall stopped uranium mining at Ranger (Northern Territory, Australia) in March.

Environmental issues at operating uranium mines

At Cotter Corp.'s idle Cañon City uranium mill in Colorado (USA), the state identified a potential leak at the tailings impoundment. An earlier state ruling to deny Cotter's bid to import waste for direct disposal at the impoundment was upheld by a Federal Judge.

A major 751 cubic meter spill of injection fluid occurred at Cameco's Highland in-situ leach uranium mine (Wyoming).

A 44 cubic metre spill of deep disposal well fluid occurred at Cameco's Smith Ranch in-situ leach site (Wyoming).

The Texas Commission on Environmental Quality issued an Agreed Order over a penalty of \$2,000 to Mesteña Uranium LLC for failing to secure acceptable financial assurance for its Alta Mesa in-situ leach uranium mine.

In Niger, NGOs demanded the immediate removal of radioactive material found in the streets of Akokan; the material is most likely waste rock from Areva/COMINAK's nearby Akouta uranium mine reused for road construction.

In South Africa, the National Nuclear Regulator withheld a report on serious contamination of water and food from gold/uranium mining activities in Gauteng.

A Water Research Commission report confirmed that South African

gold/uranium mines are causing excessive uranium concentrations in streams and stream sediments. In December, a stormwater dam failed at the Dominion Reefs uranium mine, spilling about 100,000 cubic meters of water.

In the Krasnokamensk area in Russia, resettlement is planned of 2,000 residents from the ecologically hazardous Oktyabrskoe settlement located right over the uranium mine of the Priargun enterprise uranium mine. In India, NGOs filed a petition seeking an investigation into a tailings pipeline burst that occurred at the Jaduguda uranium mine (Jharkhand) in December 2006.

In July, a Yellow Cake truck overturned in Andhra Pradesh.

Other Issues at operating uranium mines

In Niger, uranium miner Areva came under fire from different sides:

- Tuareg rebels attacked a power plant in the uranium mining area;
- the Head of Areva Niger was expelled from the country;
- a Niger civil society claimed US\$ 640 million from Areva in damages; and,
- in September, hundreds marched against Areva.

Abandoned mines

The cleanup of abandoned uranium mine and mill sites continued at the very familiar unbearably low pace, delayed for decades, with ridiculous budgets, and covering only a minuscule fraction of the sites in question.

There was, however, one event that made a difference in 2007: on October 23, 2007, the U.S. House of Representatives *Committee on Oversight and Government Reform* held a Hearing on the Health and Environmental Impacts of Uranium Contamination in the Navajo Nation. The Committee was utterly appalled by the obvious incompetence of the involved federal agencies (EPA, DOE, NRC, IHS, BIA) to deal with the legacy left from historic uranium mining on Navajo land, although the situation is notorious for decades ("We do pay you, don't we?"). The Committee urged the agencies to tackle the problem without further delay and to identify any areas

where Congressional action may be required.

In the Northwest Territories (Canada), a contract was awarded for remediation work at the former Port Radium mine. Canada's Government and the Province of Saskatchewan announced the first phase of the cleanup of Saskatchewan's abandoned uranium mine sites. The clean-up project is to address the issue of "Cold War legacy mines," which were small, short-term mining operations conducted in the 1950s and 1960s primarily in the vicinity of Uranium City in northern Saskatchewan.

The Canadian Environmental Assessment Agency announced the commencement of an environmental assessment for the Former Gunnar Mine Site Rehabilitation Project in Saskatchewan.

In South Dakota (USA), a one-man "occupation" of Slim Buttes protested the slow clean-up of old uranium mines in the area.

In New Mexico, the U.S. Environmental Protection Agency (EPA) started the clean-up of residential properties contaminated from the former Church Rock and Northeast Church Rock uranium mines.

In Germany, the reclamation of the abandoned Lengenfeld uranium mill tailings site in Saxony was announced to start with a 4-year delay in 2009; this is one of the Wismut legacy sites that were not covered by the major federal cleanup program of the former Wismut sites.

In Kazakhstan, reclamation of two sections of the Koshkar-Ata uranium mill tailings dam was to begin in November and would last 20 months. NATO announced to help Kyrgyzstan in the realization of five projects on the management of uranium tailings dumps.

In Zambia, a study was commissioned on environmental and health hazards from waste dumps of former uranium mining in the Kitwe area. So far, 600 people who were living near the uranium dumps have been resettled elsewhere.

An International Atomic Energy Agency (IAEA) program is assisting Tajikistan to assess the impact of millions of tons of uranium tailings in abandoned sites. The tailings sites, a potential source of radioactive and heavy metal pollution,

are the legacy that has accumulated in the region over five decades of operation of uranium mines and mills without proper environment management programs in place. Some of the 10 abandoned uranium mill tailings sites are sited near towns and villages. All of them are in the north of Tajikistan. In Taboshar, a former center of uranium mining and milling, a hill of more than one million tons of process residue tailings lies unprotected, vulnerable to erosion by wind and rain. Animals drink from pools of water that gather at the foot of the hill when seasonal rains fall, and children play around it. Some material from the tailings sites has also been used in home construction.

Decommissioning issues

Two examples of unexpected security breaches at uranium mill tailings deposits were reported in the U.S. Though not posing an immediate hazard, they once again show the difficulty of assuring the security of a radioactive waste deposit in the long term, since security breaches tend to come from unexpected directions:

- At the Burrell tailings disposal site ([Pennsylvania](#)), a *beaver dam* had to be removed; the dam caused water to back up, jeopardizing the integrity of the deposit.
- On July 2, 2007, a [Washington state](#) helicopter fighting a wildfire near Long Lake dumped an estimated 1.67 cubic meters of *water scooped from Dawn Mining Co.'s unreclaimed Ford uranium mill tailings pond*. The pond is "clearly marked on the ground" with warning signs, said Donn Moyer, spokesman for the Washington Department of Health. But such signs would be practically impossible for a helicopter pilot to read, especially during a firefighting mission. "You wouldn't anticipate an aerial breach of security," he said.

At the Shirley Basin South uranium mill tailings disposal site ([Wyoming](#)), it was found that Radium-228 exceeds the alternate concentration limits in groundwater. The cause for this occurrence has not been determined. The Agency for Toxic Substances and Disease Registry (ATSDR) released a report about the health hazards at the

former Midnite Mine Site ([Washington](#)). The report found no public health hazard, unless the site use would change to residential.

The never-ending story of the management of the Moab uranium mill tailings ([Utah](#)) experienced another twist, when in February it became known that the planned relocation of the 10-million t tailings pile away from the bank of the Colorado river could span *more than 20 years*, since the U.S. Government hasn't made sufficient funds available. In addition, the U.S. Department of Energy raised its cost estimate for the relocation to the range of \$635 - \$835 million. Cameco sought approval for a bioremediation test for groundwater restoration at its Crow Butte in-situ leach mine ([Nebraska](#)). So far, bioremediation has not been used for this purpose on a commercial scale. In [Arizona](#), contaminated groundwater from a radioactive waste dump near Tuba City was found to be migrating towards a Hopi drinking water spring; a chemical analysis has linked waste found in the dump to byproducts of a uranium mill formerly located a few miles from Tuba City; the Department of Energy had previously dismissed any such link.

The [New Mexico](#) Environment Department was unable to raise funds for well testing required to prove elevated contaminant concentrations found in residential wells near Grants are attributable to former uranium mining activities in the area. In turn, residents living downstream from the Homestake Grants uranium mill tailings site have formed the Bluewater Valley Downstream Alliance to emphasize their demand for a restoration of the contaminated groundwater in the area. A pilot study to improve groundwater restoration at the Church Rock uranium mill tailings site by injection of alkalinity ended unsuccessful.

The [Texas](#) Department of State Health Services issued an Agreed Order to Everest Exploration Inc. imposing a \$2,500 penalty on violations at the Hobson in-situ leach decommissioning site.

In Argentina, the National Commission of Atomic Energy (CNEA) began repair works at the effluent ponds of the former Sierra Pintada uranium mine in [Mendoza](#).

In [France](#), a so-called "pluralist expert group" released a first report on the uranium mill tailings deposits in the Limousin area. The group had been appointed by the ministries of the Environment, Health and Industry. In its first report, the group mainly looked at the Bellezane uranium mill tailings deposit. The group recommends to develop a better understanding of the site hydraulics, to search for possible diffuse sources of contamination, and to conduct a quantitative assessment of the efficiency of the tailings cover, among others.

An unannounced sampling of effluents by the DRIRE agency found no exceeding of standards at former uranium mine sites in the Limousin area.

The independent laboratory CRIIRAD identified elevated radiation levels at several public locations around the reclaimed site of the former open pit uranium mine and uranium mill at St Pierre du Cantal.

In [Germany](#), the relocation of Wismut's landmark waste rock piles in the Ronneburg area in Thuringia was completed. The former Wismut uranium mining area in Ronneburg became a site of the 2007 German federal garden festival. The almost completed reclamation effort in the area still left some problems unresolved, though: at times of wet weather, contaminated waters from the flooded underground uranium mines in the Ronneburg area were found to reach the surface and spill into surface waters. Due to various technical problems, Wismut GmbH currently is not capable of treating the water nor keeping the groundwater level at a lower level (in order to avoid further spills).

The NGOs SHERPA, CRIIRAD and Médecins du Monde presented the results of an investigation into the health and environmental situation at Areva/COGEMA's former Mounana uranium mine in [Gabon](#). They denounced the follow-up of the health of the former miners, as well as the reclamation done at the site, as inadequate.

In [South Africa](#), windblown dust still presents an issue at Harmony Gold's Randfontein gold/uranium mill tailings; the intermediate dust suppression measures taken improved the situation somewhat, but a real solution requires

some long-term measure.

Miners' and residents' health issues

Medical reports of the Regional Government of Andalusia (Spain) dismissed claims that the radiation doses received by the former Andújar uranium mill workers were the cause of their diseases.

A cohort mortality study conducted among residents near the former Uravan uranium mill in Colorado (USA) found no increased mortality attributable to environmental radiation exposures above natural background associated with the uranium mill operations.

A new study found that drinking water with uranium below U.S. EPA water standard causes estrogen receptor dependent responses in female mice. The authors conclude that their data supports the conclusion that uranium is an endocrine disrupting chemical and populations exposed to environmental uranium should be followed for increased risk of fertility problems and reproductive cancers.

Uranium trade and foreign investment issues

Uranium supply and demand

China says its domestic uranium deposits are sufficient by 2020 only. Imports are needed, as China's uranium demand is to rise sixfold by 2020.

The fuel shortage at India's nuclear power plants is worsening further: Five of the 17 nuclear power plants in the country had been shut down and the remaining are operating at an average of less than 50 per cent capacity for lack of fuel.

Uranium import restrictions

The U.S. Department of Commerce (DOC) released a draft agreement allowing for limited uranium imports from Russia; so far, such imports had been restricted to protect the U.S. uranium industry.

Russia demanded the European Union (EU) to drop its policy of importing not more than 25% of its uranium

requirements from Russia. The EU had introduced this quota to ensure supply diversification, among others.

Uranium export restrictions

Ukraine suspended uranium exports after failing to fill up its national reserve to the required 2,400 t.

The South African government considers compelling local miners to offer uranium first to the state to feed the country's expanding nuclear energy program.

Australia and China ratified agreements on nuclear cooperation and uranium exports to China, heavily opposed by Australian NGOs.

Australia signed an agreement for uranium exports to Russia, in spite of a nuclear weapons proliferation risk. Australia made further moves to sell uranium to non-NPT signatory India; a formal agreement has not been announced yet, however. Pakistan said that it wants Australian uranium, too, if India should get it.

Uranium trade, general

The European Union pointed out that it wants a share of Australia's future uranium sales, rather than be closed out of the billion dollar market by China and India. It is arguing that Europe, as a strong supporter of the Nuclear Non-Proliferation Treaty, is a reliable consumer of uranium compared with other countries.

Somalia offered export of uranium to Russia.

Areva's subsidiary UraMin Inc., developer of the Trekkopje mine in Namibia, plans to sell 35% of its future uranium output to China.

BHP Billiton considers the export of unsmelted Olympic Dam copper/uranium concentrate to China (see above).

Japan signed an agreement with Kazakhstan for procurement of 30% of its uranium demand.

Foreign mining investment and cooperation

In view of the tight uranium market, several large consumers, or potential large consumers felt that it is advisable to not only buy uranium on the market, but also to invest into foreign uranium

exploration and mining projects: Russia is to help Ukraine to develop the Novokonstantinovskoye uranium field. Russia enters a uranium mining joint venture in Armenia.

Russia and Mongolia are to jointly prospect, produce, and process uranium.

Russia and Canada agreed on joint uranium prospecting.

Russian firms formed a Joint Venture and signed a memorandum to produce uranium in Namibia.

Chinese-owned mining company SOMINA was granted a mining license for the Azelik uranium deposit in Niger. China is to get a stake in a uranium mine in Kazakhstan.

Sino-Australian company Dragon Energy Ltd joined uranium exploration projects in Queensland (Australia). China's Sinosteel Corporation was given green light for investment in an Australian uranium exploration company.

Indian company Taurian Resources Pvt Ltd. was granted a uranium exploration and mining permit in Niger.

India's Reliance Industries joined uranium exploration projects in Australia.

South Korea and Ukraine signed an agreement on nuclear cooperation and development of uranium deposits.

Korea Electric Power Co is to participate in the development of the Valencia uranium mine in Namibia.

Russia and South Korea consider a uranium production Joint Venture. Japanese Sumitomo Corp. (notorious for the 1999 Tokai criticality accident) is to join the development of the Roca Honda uranium mine project in New Mexico (USA).

Japanese Itochu Corporation is willing to develop a uranium mine in Namibia. Japanese utilities acquired an indirect participation in the Kharasan uranium mine project in Kazakhstan.

Furthermore, some current uranium miners committed to assist newcomers to develop their own uranium mining industries:

Kazakhstan assists Jordan with development of uranium deposits.

India is to assist Vietnam with uranium ore processing technology.

The 2007 and all other annual uranium mining reviews can be found at: <http://www.wise-uranium.org/>

U.S. CONGRESS APPROVES \$18.5 BILLION IN LOAN GUARANTEES FOR NEW REACTOR CONSTRUCTION. DIDN'T IT?

Following months of the most concerted grassroots action on nuclear power issues since the 2002 Yucca Mountain decision, the U.S. Congress voted in mid-December to give the nuclear industry about half of what it wanted and approved US\$18.5 billion (Euro 12.4 billion) in taxpayer loan guarantees for new nuclear reactors. Or did it?

(665.5853) NIRS - Compromise legislation written late at night on a weekend just before a holiday break, as the final loan guarantee language in the Congress' omnibus appropriations bill was, is rarely perfect. In this case, the legislation as passed will raise questions well into the new year. And any nuclear utility expecting Uncle Sam to co-sign on a blank loan check in the next few months had better re-think their plans: this battle isn't over.

Here is what Congress did do: the omnibus appropriations bill included statutory language allowing the Department of Energy (DOE) to hand out loan guarantees for energy projects. Never mind that DOE probably already had that authority.

In its report accompanying the legislation, Congress recommended specific dollar amounts for loan guarantees for various energy technologies, and an implementation process. The report states that Congress recommends that DOE distribute a total of US\$38.5 billion in loan guarantees, broken down to include US\$18.5 billion for new reactor construction; US\$2 billion for the "front end of the nuclear fuel cycle," which means the proposed USEC uranium enrichment plant in Ohio; US\$6 billion for "clean coal" technologies, US\$2 billion for coal-to-liquid technologies, and US\$10 billion for a grab bag of renewable energy, energy efficiency, and distributed energy systems.

Compare those numbers to the Bush Administration's original request, which asked for a total of US\$9 billion for all energy technologies. The nuclear industry didn't like that number, and wanted US\$50 billion over two years for itself. By the end, the administration was happy to provide more than 4 times the amount it recommended-it

probably would have gone for the full US\$50 billion, and Congress was happy to authorize more than anyone considered possible at the beginning of the year, even while it was supposed to be a victory for environmentalists that Congress cut the industry's request by more than half. Out of such victories do defeats become legendary.

But in its report, Congress also requires the DOE to submit a loan guarantee implementation plan to the Senate and House Appropriations Committees at least 45 days before awarding any guarantees, and the language requires approval of the plan by both Committees before any money can be handed out.

So there are two huge problems. One is that the statutory language-the legal language signed by President Bush-doesn't specify any money for the loan guarantee program, nor how it should be spent. The other is that the report language doesn't have the force of law, although it does, by precedent, establish the intent of Congress.

One view is that all this means that DOE can co-sign loans for any amount it wants for any technology it wants. That might be literally true, although any DOE administrator who would try that likely would find his/her funding cut off pretty quickly. Another view is that Congress' action means that DOE still has a lot of hoops to go through before it can guarantee anything. Adding to this second view is that DOE has not yet had to "offset" loan guarantee expenditures. Under the Democratic-controlled Congress, new expenses have to be "offset" by reductions in other expenses. While the loan guarantees aren't technically expenses (until a utility defaults on a loan-then the taxpayer has to eat the loss), there are expenses involved in operating the

program-and those expenses have not yet been offset, meaning that DOE may have to cut its budget in other places if it wants to hand out loan guarantees.

Another problem is that no utilities are yet in a position to be able to use loan guarantees for new reactor construction. The first license applications for new reactors have only recently been submitted, no hearings have even yet been held, and no reactor construction can begin for at least another three years and probably longer. So any guarantees for construction costs are extremely premature. Why, for example, should DOE co-sign a loan for a utility that for whatever reason may not even receive a license, or may choose not to build even if it does receive a license? And given that there is a limited amount of guarantee authority available, why should DOE agree to a guarantee without an assurance the project will proceed, since by doing so it would be tying up money that could go to another project?

And if the Appropriations Committees decide they don't like DOE's implementation plan? In that case the guarantees could be delayed by months-or maybe forever.

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Where the Loan Guarantee Money Would Go

US\$18.5 Billion is a lot of money-unless you're trying to build a bunch of new nuclear reactors. In that case, US\$18.5 billion just doesn't go as far as it used to. Under the DOE's loan guarantee regulations, the agency can co-sign for loans for up to 80% of the cost of a new reactor. With Wall Street projecting costs of US\$5 billion to US\$9 billion+ per reactor, that money won't last long, if it's spent at all. In fact, it would only cover four to perhaps six, at most, new reactors. Here are the utilities first in line to try to go after that pot of gold:

***NRG Energy** is clearly first in line at this early point. This company, which has never before built a nuclear plant, has submitted an application to build not one, but two new General Electric Advanced Boiling Water Reactors at the South Texas Nuclear Project site. Although most of the financial information in its application is claimed to be proprietary (NIRS is now working on a challenge to this assertion), the application admits that DOE loan guarantees are a critical part of the company's plan. Texas groups have been gearing up to challenge the reactors. Despite the NRC's acknowledgement that the application is woefully inadequate and that NRG cannot possibly come up with all the data needed to make it complete for another year, the NRC went ahead and docketed the application in December, meaning that the Texas groups have until February 25 to intervene in the licensing process. Check nukefreetexas.org for updates on the Texas situation.

Odds that NRG will ever build a reactor: 10-1. Odds are even worse that NRG will build two reactors. Any company trying to build two at once, without ever having built even one, is either too egotistical to matter, or too naïve to be believed, or-in practical terms-is poised to lose a ton of money. Wall Street won't like this project even with the loan guarantees.

***Unistar** may-or may not-be second in line with its proposed 1600 MW EPR reactor at Calvert Cliffs, Maryland. This company, composed primarily of Constellation Energy and Areva, was first to file a partial license application with the NRC, last July. But they weren't first to file a complete application, partly because the Areva EPR reactor is still undergoing design changes in Finland. Unistar also has admitted that the loan guarantees are crucial to its plans-without them, no reactor will be built. NIRS and Maryland PIRG have petitioned to intervene in Maryland Public Service Commission proceedings on the project, which will focus on the economic issues surrounding the project. Unistar filed a motion January 10 to try to prevent NIRS' participation in the proceeding, based upon Unistar's guesses as to the type of contentions NIRS might file. Huh?

Odds that Unistar will ever build a reactor at Calvert Cliffs: 7-1. The opposition to Calvert Cliffs-3 is quite strong, and Maryland is not the most nuclear-friendly state in the Union. Unistar has some money of its own, and a US\$300 million tax abatement plan from Calvert County, Maryland, but the EPR is a disaster of a design, and there are cheaper, faster, safer, cleaner ways of providing electricity

to Marylanders.

***NuStart Energy**, representing the Tennessee Valley Authority, has filed an application to build two new Westinghouse AP 1000 reactors at the Bellefonte, Alabama site on which TVA once tried unsuccessfully to build two Babcock and Wilcox reactors. While overt opposition has been slow to materialize there, the fact is that the people in the region successfully beat back the original Bellefonte reactors as well as Urenco's short-lived idea to build a uranium enrichment plant on the site.

Odds that NuStart will ever build a reactor: 2-1. TVA remains deeply in debt from its first round of reactor construction from the 1970s-1990s. But as a federal agency, it doesn't seem to care much about debt. Opponents of nuclear projects at the site have won before, but it's going to be harder this time, and they seem slow to react this time.

***Duke Power** has filed an application to build two Westinghouse AP 1000 reactors in South Carolina-the only application for new reactors so far that would be built on a "greenfields" site.

Odds that Duke Power will build a reactor at this site: 2-1. If it weren't Duke, we'd say the odds are 10-1 or worse for building a new reactor on a greenfields site. But Duke is a major player in the nuclear arena and this is the only nuclear project they're considering. Plus the "William Lee Nuclear Station" is named after a past Duke CEO, giving them an added "pride"impetus. But South Carolina has confounded the nuke boys before (see closure of Barnwell radioactive waste dump in June 2008).

***Dominion Power** has filed an application to build one new reactor at its existing North Anna, Virginia site, for which it already has obtained an early site permit (ESP, which is under challenge from environmental groups). While the ESP might seem to give it a leg up on the early competition, none of which applied for one, the GE ESBWR reactor design it wants to build is a long way from being certified by the NRC.

Odds that Dominion Power will build a new reactor at North Anna: 10-1. What are they thinking? A few years ago Dominion's CEO was telling its stockholders in public meetings that he'd have to be insane to propose a new reactor. He's been replaced. So, for the moment, insanity rules at Dominion. Sanity will be restored before a new reactor is built, especially an ESBWR, which doesn't really even exist on paper, much less in cool 1/32nd scale plastic models. A steel and concrete version? Many years away-much further than the loan guarantees will last.

Behind these are expected applications for 25 more proposed new reactors in the U.S., according to the NRC's website as of January 2, 2008. Clearly, \$18.5 billion in loan guarantees isn't going to go far, and the reality is that many of these purported nuclear projects aren't going to go very far either.

Indeed, this entire issue began last summer, when the House Appropriations Subcommittee on Energy and Water voted to provide zero loan guarantee funds for nuclear projects in 2008, because the subcommittee didn't think DOE was ready to implement such a program, nor were any utilities in a position to accept any money. Both of those factors remain true today.

Outgoing Senator Pete Domenici (R-NM) was so upset by this vote that he tried to put language in the energy bill that would allow DOE to give out unlimited loan guarantees-presumably to his favorite nuclear technology.

On the House side, pushed by an enormous grassroots effort and activity

by nearly every Washington-based environmental and safe energy organization, Speaker Nancy Pelosi (D-Calif.) did an end-around Domenici and successfully kept his loan guarantee language out of the House version of the energy bill, while also passing a modest renewable energy portfolio standard. Domenici got back by successfully stripping the renewable energy standard from the Senate version, but in the end his loan guarantee language stayed out of the energy bill.

Undeterred, Domenici went to work on the Appropriations bill, and managed to get in language allowing DOE to give out US\$25 billion this year for nuclear power, without strings. Last-minute negotiating led to the final version-the

report language of US\$18.5 billion for new reactors coupled with Appropriations Committee approval. About the only thing that is certain is this: the fight over nuclear loan guarantees is far from over and will continue for the next several months. Continued grassroots actions can still stop the money flow from taxpayers to wealthy utilities and Wall Street bankers. In the end, your actions are likely to make the difference between taxpayer support for new reactors versus the oh-so-sad-well, ok, absolutely inspiring--vision of nuclear utilities going to Wall Street, hat in hand, and seeing only closed doors.

Source and contact: Michael Mariotte at NIRS

IN BRIEF

Finnish PM: 'nuclear power not the way to fight climate change'. On a visit in Washington, Finland's prime minister Matti Vanhanen said building more nuclear power plants is not the way to fight global climate change. Reducing energy consumption, especially from automobiles, would do more to fight climate change he said.

Meanwhile, late last year Areva-Siemens added another 6 months to their delivery estimate of Olkiluoto-3, and so now say that construction will take 6.5 years rather than 4 years as promised. The reactor will be completed in "summer 2011," the Areva-Siemens consortium announced on December 28. So there is now a 2.5 year delay after 2.5 year construction. "The delay of the project will cause additional work and costs," said Martin Landtman, project director for the Olkiluoto-3 EPR. Areva's 2007 annual results are due for release on 28 February 2008. This release usually is the best opportunity for an update on further cost over-runs.

Platts, 28 December 2007, Reuters, 14 January 2008

China contributes \$1.4 billion to ITER. China will contribute 10 billion yuan (US\$1.4 billion or 940 million Euro) to the International Thermonuclear Experimental Nuclear Reactor (ITER). Chinese researchers will build components and transport them to Cadarache, where construction of the nuclear fusion reactor is due to start this year. The Chinese contribution represents around 10% of the estimated cost of ITER, which is scheduled to come online in 2016. The components to be produced by China include heating, diagnostic and remote maintenance equipment. China joined the ITER consortium in February 2003, currently the ITER membership also includes the US, Russia, Japan, India, South Korea and the European Union.

WNN, 8 January 2008

French energy consortium to offer nuclear plant to UAE. Oil giant Total has joined Areva and Suez to sign a partnership agreement to submit a nuclear power plant project to authorities in the United Arab Emirates. The move comes just prior to a visit by the French president to the UAE, during which a nuclear cooperation agreement is expected to be signed. Total, Suez and Areva said in a joint statement that they intend to submit a proposal for a nuclear power plant in Abu Dhabi comprising two 1600 MWe Evolutionary Pressurized Water Reactors (EPRs), together with the provision of nuclear fuel cycle products and services. According to a report in French newspaper Les Echos, the companies responded to interest from the Abu Dhabi Water and Electricity Authority, the ADWEA, which has outlined plans to construct the plant. The report said that a final decision on the plant by the ADWEA could happen "in the next few months." Christophe de Margerie, CEO of Total, recently said that he expects the company to expand its activities and to enter the nuclear energy industry.

WNN, 14 December 2008

The end to the "price virtually independent from fuel price" story? The electricity that nuclear power plant Belene (Bulgaria) will generate when finished will cost at least 4.5 euro-cents per kilowatt-hour, which is by one euro-cent (1.49 dollarcent) more than the price initially announced a year before by Russian builders Atomstroyexport. The consumers' price of the electricity from Belene is still uncalculated, but will be "at least 4.5 eurocents" (kWph), according to Bulgaria's Minister of Economy and Energy Petar Dimitrov

Thus, the prime cost of the power the future nuclear reactors will produce has gone 1 eurocent up even before the nuke's construction has actually begun. It was last year that Atomexportstroy, the Russian contractor which is to build up the power plant, won the tender for the construction of the two nuclear reactors, having offered a bid of nearly 4 billion euros and an electricity prime cost of 3.5 - 3.7 eurocents per kWh.

What is at Belene NPP remains a complete mystery. According to well-informed sources, one of the reasons for the increase of the price of power is the growing prices of uranium. A 25% price increase in the Belene case due to uranium price rises?

That's the end to the "price virtually independent from fuel price" story!

Standart news, 28 December 2007 (with thanks to Jan H.)

Zapatero vows nuclear energy cuts in Spain. Spain's prime minister, Jose Luis Rodriguez Zapatero, has promised that if he is re-elected on 9 March he will reduce the country's dependence on nuclear power. Speaking at an economic forum in Madrid, he said: "My position is not to increase nuclear energy in our country but rather to progressively reduce it and to make a collective effort in favour of renewable energy."

World Nuclear News, 11 January 2008

Sign petition to end the nuclear industry in Saskatchewan! The new provincial government of Saskatchewan, Canada is already talking about plans to expand the nuclear industry in the province - very bad news. Saskatchewan is one of the major uranium producers in the world, and the prime exporter to the U.S. This is a front-line battle that must be waged by Saskatchewan residents, with international support.

"Citizens for a Nuclear-Free Society" is a local (Regina) grass-roots group which is working towards urgently needed changes in our provincial government's policies and plans as regards the uranium industry. We firmly believe that the government must abandon proposed plans for nuclear expansion that have been in the works for some years now. With the recent change in the provincial government, there is already talk of building a nuclear reactor in the northern part of the province, as well as possibly fuelling the Alberta Tar Sands oil extraction project, an environmental disaster in its own right. We believe that there are a multitude of very strong reasons to oppose further uranium mining, export and refinement, as well as nuclear development. These arguments, which are environmental, economical and ethical, clearly prove that this industry must not continue to grow, but rather, should be phased out. Please have a look at the Non-nuclear petition we have created. If you are in agreement, please sign it. It will eventually be forwarded to our Saskatchewan Legislative Assembly.

<http://www.PetitionOnline.com/nonuc1sk/petition.html>

A reactor in every apartment building? In 1958 German electronics Siemens introduced a nuclear reactor for in-home use, according to an ad in August 8, 1958 issue of 'Das Magazine der Technik'. They never sold one, fortunately. But, well, that was the 1950's, when everything seemed to be possible: nuclear planes, nuclear cars, nuclear trains, so why not your own nuclear reactor?

And now? Toshiba, famous for electronics products around the world, plans to build "small" (room-sized) fully-automated nuclear reactors. An apartment complex for the rich can guarantee itself steady power "for up to 40 years" according to the (optimistic) manufacturer. The cost is rumored to be about US\$3.5 million., producing electricity for only 5 cents per kilowatt hour. According to a company announcement, Toshiba expect to bring the first of the 200 kW new reactors online in 2008 in Japan, and in Europe and America in 2009. The Toshiba baby-nukes will rely on a closed-loop lithium-6 primary coolant system, instead of water. The lithium-6 can also serve as a moderator to stop the reactor if necessary, the manufacturer claims.

There is no mention about what happens after those 40 years.

Next Energy News, 17 December 2007



On January 10, British Prime Minister Gordon Brown, announced his government's support for a new generation of nuclear power stations that will cost billions, eventually deliver only tiny cuts in carbon emissions and leave future generations with a legacy of nuclear waste to clean up. The fact is, going nuclear won't solve the UK's or the world's global warming problem because it can only deliver around a 4 percent cut in carbon emissions some time after 2020. That's far too little, far too late and at too high a price. The UK government have made much of their green credentials boasting that they lead the world in tackling climate change.

In a special edition of the Nuclear Monitor, which will be published on January 24, we will look at the policy of the UK government, regarding the interconnection between the EU Emissions Trading System (ETS) and nuclear power. The UK government, having pushed emissions trading into the EU framework, is also behind the attempt to kill renewable energy. The UK government needs to be exposed as the most destructive and active agent of the nuclear and carbon economy, and therefore the main enemy of renewable energies.

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WISE/NIRS NUCLEAR MONITOR

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

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

Receiving the WISE/NIRS Nuclear Monitor

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