

# NUCLEAR MONITOR

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## BRUCE POWER WILL NOT PROCEED WITH NUCLEAR OPTION IN ALBERTA

In a December 12 press release, Bruce Power stated it has decided it will no longer advance the option for a new nuclear plant in Alberta. A new nuclear power reactor has been under consideration by Bruce Power, Canada's only private nuclear power generating company, since 2007.

**(739.6203) WISE Amsterdam** – "Throughout our existence at Bruce Power we've looked at a number of potential business development opportunities," said Duncan Hawthorne, Bruce Power's President and Chief Executive Officer in the official press release. "We've decided the new nuclear option in Alberta is not something our company will be progressing further."

Bruce Power is a partnership among Cameco Corporation, TransCanada Corporation, BPC Generation Infrastructure Trust (a trust established by the Ontario Municipal Employees Retirement System) the Power Workers' Union and The Society of Energy Professionals.

Since late-2007, when Bruce Power acquired Energy Alberta, the company has become known in Alberta and Peace Country, developing and evaluating the possibility of building a new nuclear facility to power Alberta's growing economy. The Alberta government also opened the door to considering the nuclear option, under some conditions, following a public consultation process throughout the province. After extensive analysis and environmental studies, Bruce Power also identified an ideal site.

"There is no question, the option for a new nuclear facility in Peace Country and in Alberta is a strong one and will be an important consideration moving forward," Hawthorne said. But why then this decision? "Innovative businesses develop and consider new opportunities, but we've made a business decision to continue to put our full focus on the safe, reliable operations and ambitious

investment program on our Bruce site," Hawthorne said. Units 1 and 2 of the Bruce nuclear power plant in Ontario are out of operation since 1995 (!) but are planned to return to service in 2012. The site has 8 units all connected to the grid between 1977 and 1987.

It is a tribute to the hard work and intelligent criticism of the citizens of Alberta -- North, South, and Central -- that the project has been unceremoniously scrapped.

It bears out the claim that some critics made from the beginning, that the building of nuclear reactors in Northern Alberta would only truly benefit the reactor salesmen, who desperately wanted to build a nuclear reactor somewhere -- anywhere! -- in North America to facilitate sales to other countries around the world.

Special thanks must go to the dedicated citizens in various locations who worked tirelessly to educate their fellow citizens of the inherent dangers of nuclear power, as manifested most dramatically by the explosive self-destruction of 4 reactors in Japan earlier this year.

**Source:** Media release Bruce Power, 12 December 2011 / Gordon Edwards, 12 December 1211

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# THE FUTURE OF THE NUCLEAR SUPPLIERS GROUP

After the first Indian nuclear explosive test in 1974, seven nuclear supplier governments were convinced that the Nuclear Non-Proliferation Treaty (NPT) alone would not halt the spread of nuclear weapons. Seven governments formed the Nuclear Suppliers Group (NSG), and over the course of more than three decades, it is described by Mark Hibbs in a new report "the world's leading multilateral nuclear export control arrangement, establishing guidelines that govern transfers of nuclear-related materials, equipment, and technology."

(739.6204) WISE Amsterdam - To encourage the Nuclear Suppliers Group to consider issues that have a significant impact on its future credibility and effectiveness, the Carnegie Endowment held a workshop in Brussels, "The Nuclear Suppliers Group and the Future of Nuclear Trade," from May 9 to 10, 2011. The workshop, supported by the Ministry of Foreign Affairs of the Netherlands, which assumed the NSG chair in June, was attended by 75 experts, including officials from 30 NSG-participating governments.

One month after the workshop, at the NSG's 2011 plenary meeting held in the Netherlands formally assumed the chairmanship of the NSG for one year. (see for a report on the NSG plenary meeting Nuclear Monitor 729 –July 1, 2011: New NSG guidelines limit India's access to sensitive nuclear technology)

It was agreed that Carnegie would publish an open report based on the proceedings of the workshop in the interest of informing the broader policy community about the discussion held during the meeting. A compendium of suggestions and recommendations emerging from the workshop is included in the recently published report: "The future of the Nuclear Suppliers Group" written by Mark Hibbs. The report, however, is broader in scope than the workshop, and it concerns itself with the history of the NSG from its inception as well as with events that transpired after the workshop was held.

One of the main conclusions of the workshop was that the NSG must decide how to manage its future relationship with states outside the group and how to define itself with respect to the NPT, whose 190 parties are committed to preventing the spread of nuclear weapons, and promoting disarmament and the peaceful use of nuclear technology. International nuclear commerce is rapidly evolving into a system of complex transactions involving destinations and actors that until now have been disconnected from the world of nuclear trade

controls, be they governments that are members of budding regional customs unions or independent brokers, traders, and financiers such as those who have been affiliated with Pakistani scientist Abdul Qadeer Khan. As the world's nuclear industry expands, engaging those countries outside the NSG framework will be far more critical than at any time in the NSG's history.

India is one such country. As a state with undeclared nuclear activities outside the NPT, India was barred by the NSG and the NPT from most international nuclear commerce, but the group lifted nuclear trade sanctions against India in 2008 at the request of the United States, supported by other major nuclear exporting governments, including France and Russia. Workshop participants addressed the question of whether the India decision was a "singular exception" to principles set by the NPT parties and adopted by the NSG, as its main advocates claimed, or whether it marked a significant course correction by the NSG toward the goal of obtaining the adherence and participation of all nuclear supplier states, including those outside the NPT that enrich uranium, reprocess irradiated nuclear fuel, and have nuclear weapons. Attendees presented arguments for both cases but came to no consensus.

Now, three years after the India exception, China intends to export more power reactors to Pakistan, which is, like India, a state outside the NPT with nuclear arms. According to NSG guidelines, Pakistan would have to commit to full-scope International Atomic Energy Agency (IAEA) safeguards as a condition for the transaction. That will not happen, and workshop participants discussed whether China can be persuaded not to export the reactors or instead to seek a formal exception to NSG guidelines. China claims the exports are "grandfathered" by a long-standing agreement with Pakistan. Presently the NSG has not formulated a response to China's challenge, but if Beijing does not come to some agreement with the

NSG, the group's credibility will be damaged, workshop attendees warned.

The NSG must be prepared to include new exporters, many of them developing countries previously outside the fabric of nuclear trade rule making. It will also have to address concerns that the organization is an exclusive club that undercuts states' rights to nuclear commerce. The NSG incorporated China into the group in 2004 and should consider this experience in any future expansion. The United States has forced the pace of this discussion by advocating full NSG membership for India. Though workshop participants from India, Israel, and Pakistan presented arguments as to why these countries should be included in the arrangement, there was no consensus among the attendees that that should happen in the near future.

All of this will affect the rules by which the NSG operates. According to the report the NSG needs to consider how its voluntary participation and consensus-based decision making will fare as more states join the group. Voluntary commitments are difficult to enforce. But many workshop participants saw little upside to turning the NSG into a more formal organization. That is exactly one of the main criticisms. Basically, the NSG is a group of countries selling nuclear technology, which means that the access to that technology should not be hindered too much.

The full report 'The future of the Nuclear Supplier Group' written by Mark Hibbs and published by the Carnegie Endowment can be found online, at: <http://carnegieendowment.org/2011/12/13/future-of-nuclear-suppliers-group/87kf>

**Source:** Media Release Carnegie Endowment, 14 December 2011

**Contact:** The Carnegie Endowment for International Peace, 1779 Massachusetts Ave. NW, Washington, DC 20036 United States

# ALP EXPORT POLICY: DOLLAR SIGNS OVER DANGER SIGNS

With around 40% of the world's uranium and currently supplying around 20% of the global market from three commercial mines, the issues of safety, radioactive waste management and the proliferation of nuclear weapons underpin Australia's uranium mining and export debate. At its National Conference in December 2011 the Australian Labor Party (ALP) took a big step down a dangerous and divisive path with its decision to clear the way for uranium sales to India.

## (739.6205) Australian Conservation

**Foundation** - A cornerstone of the governing Australian Labor Party's (ALP) uranium policy has been a pre-condition to only supply nations that have signed the UN's nuclear non-proliferation treaty (NPT).

In operation since 1970 and with 190 nations signed on, the NPT is one of the world's most subscribed to Treaty's. Only India, Pakistan and Israel have never signed the NPT while North Korea withdrew in 2003. Although imperfect, the NPT remains one of the world's best ways to restrict the spread of its worst weapons.

In November 2011 Australian Prime Minister Julia Gillard abruptly announced she would seek to weaken Labor's commitment to the NPT by exempting India and freeing up uranium sales. This move led to a high profile and close fought debate at the ALP's National Conference in early December.

Selling uranium to India would breach Australia's clear obligations under the South Pacific Nuclear Weapons Free Zone Treaty – the Treaty of Rarotonga – which requires treaty partners to only supply nuclear materials, including uranium, to nations that accept comprehensive 'full-scope' international safeguards. India does not and has stated it will not. Around 50% of Indian nuclear facilities remain exempt from international inspection and review. Any move to sell Australian uranium to India would put further pressure on the already stressed, under-resourced and under-performing international nuclear safeguards regime.

Proponents of the policy change relied on internal ALP political machinations and enforced crude factional bloc voting rather than assessment or analysis to advance their position.

There was no clear and compelling case made to justify dropping such a long standing and prudent policy position or to address the fact that the sale of uranium to India is inconsistent with the ALP's view that Australia can make a significant contribution to promoting nuclear disarmament and the reduction of nuclear stockpiles.

Critics of the plan highlighted India's active weapons development program, the deep and continuing hostility between India and its nuclear armed rival and neighbour Pakistan and the increasing tension with China. Adding Australian uranium into this volatile context would further these divisions and risks, free up domestic Indian uranium supplies for use in India's military nuclear program and lead to calls for future uranium sales to Pakistan.

Pro-nuclear and conservative commentators with strong nuclear industry links joined the chorus of concern ahead of Conference to call for a halt to the rushed and ill-conceived sales plan. Australian NGO's and anti-nuclear groups like the Australian Conservation Foundation, Friends of the Earth, the Beyond Nuclear Initiative and the International Campaign to Abolish Nuclear Weapons joined with other civil society groups to highlight the issue.

Many of the 400 Conference delegates received letters, briefing materials, phone calls and visits. The corridors of Canberra were walked and talked. Opinion and commentary pieces were written, media comment and briefings provided and there was an active presence at the Conference itself.

Sadly, the potential dollar signs shone brighter than the very real danger signs. Debate over Australia's obligations under international law and role and responsibility as a provider of a dual use mineral was deliberately clouded by unrelated issues including the Prime Minister's ability to 'deliver', absurdly optimistic economic projections and the fact that India is 'friendly'.

The one credible argument raised by proponents of sales was India's pressing need for increased energy and electricity.

The provision of Australian uranium to India is not a responsible or effective response to India's aspiration to increase access to electricity to address widespread poverty.

Instead of using the cumbersome,

costly and contaminating 20th Century technologies of coal and nuclear India could leapfrog into the rapid and widespread utilisation of clean and contemporary renewable systems.

These would cause the lights to work across India while ensuring the alarms stayed silent across Pakistan and would provide a lasting and local solution to India's growing power needs.

The continuing Fukushima nuclear emergency highlights the vulnerability of nuclear power – even in a technically sophisticated country as Japan. Nuclear reactors in India, like nuclear missiles on the India – Pakistan border, would be ticking time bombs.

But such arguments did not carry the day amid the glare of the TV cameras and the shallow mantra of jobs and safeguards. On Sunday December 4, 2011 the ALP National Conference narrowly voted (206 to 185) for Australia to undermine the NPT, reject its treaty obligations and abandon any pretence of nuclear responsibility.

It has been said that opponents of the deal won the debate but lost the vote. The issue was fiercely contested within the Labor Party, including by senior Cabinet Ministers and around 45% of delegates. Many in Labor are angry with the content and process of the decision and the issue remains unfinished business both within the Labor Party and the wider community.

It is a long way from policy on the run to uranium on a ship and Australian activists are increasing their call for an independent assessment of the impacts, costs and consequences of Australia's involvement in the uranium and nuclear trade.

In the shadow of Fukushima it is time to stop cutting corners and start raising standards.

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# SELLAFIELD: THORP TO STRUGGLE ON TO 2018

In its recently published paper 'Oxide Fuels – Credible Options', November 2011, the United Kingdom's Nuclear Decommissioning Authority (NDA) sets out options for the future operation of Sellafield's Thermal Oxide Reprocessing Plant THORP. Opened in 1994 to reprocess UK's domestic Advanced Gas Cooled (AGR) fuel and Light Water Reactor (LWR) fuel from overseas customers, the plant is currently operating years behind schedule. An estimated 400 tons of overseas spent fuel that should have been completed around 2004, plus some 2000 tons of UK AGR fuel remains to be reprocessed.

(739.6206) **CORE** - In addition, a further 4000+ tons of spent AGR fuel (including the currently expected lifetime arisings from the UK's fleet of AGR power stations) are destined either for long-term storage at Sellafield prior to disposal or for reprocessing – at the NDA's discretion. Should 5-year extensions be granted to the AGR power stations, a further 900 tons of spent fuel would arise.

A November 24, CORE Briefing provides a summary of the NDA's assessment of three Options for THORP: - **1- Complete THORP's reprocessing contracts; 2- Close THORP early** by reprocessing less than the contracted amount of spent fuel and **3- Extend THORP operations** so that more than the contracted amount of spent fuel can be reprocessed.

From its assessment, the NDA has concluded that, in line with its 2011 Strategy, **Option 1** is the most viable and cost-effective - with the proviso that '*additional new and costly infrastructure can be avoided* (this would include the installation of new High Level Waste tanks), and that NDA proposals for the interim storage of AGR fuel are themselves viable. After further work to underpin the strategy, and providing the provisos are met, the NDA expects to confirm **Option 1** as its preferred strategic option by summer 2012.

NDA currently rejects **Option 3** – extending THORP operations to include more AGR fuel being reprocessed than currently contracted, and potential new business from domestic and overseas customers '*if there were any*' – because:

- extended reprocessing would require multi-billion pound investment across a wide range of infrastructure at

Sellafield, with major capital build projects required to support THORP's extension beyond 2020. Such investment would divert finite resources from the NDA's primary role of risk and hazard reduction at Sellafield, and new capital build projects would result in energy use and carbon emissions.

by the potential operators of new-build reactors in the UK to have their spent fuel reprocessed and recycled. Even had they done so, bulk quantities of spent fuel would be unlikely to be ready for reprocessing until the mid-2030's when THORP and associated facilities would be over 40 years old.

**Plutonium re-use - putting the cart before the white elephant.** Unwilling or incapable of learning from the UK's disastrous MOX fuel experiences, the December 1 Government approval for the re-use of plutonium as MOX fuel is branded by CORE as a 'decision made in the dark that yet again puts the proverbial cart before the inevitable nuclear white elephant'. With a preliminary decision taken by Government even before its Department of Energy and Climate Change (DECC) public consultation on plutonium management had started, it nevertheless promised that final approval for the re-use option was conditional on a range of major issues – including costs and demand for MOX fuel - being tested 'before the UK Government will be in any position to take a final view'. (emphasis added) The weakness of its case for the re-use of plutonium as MOX fuel has undoubtedly prevented the Government from going 'the whole hog' and putting its weight behind the construction of a new MOX plant at Sellafield or elsewhere in the UK. In its document published December 1 'Management of the UK's plutonium stocks - A consultation response on the long-term management of UK-owned separated civil plutonium' the Government however suggests that the construction of a new MOX plant could begin around 2019 with the first MOX fuel being fabricated in 2025.

On August 3, NDA decided to close the Sellafield MOX Plant SMP, a total failure which has so far cost the taxpayer BP1.4 bn (US\$2.18 bn or 1.67 bn euro). (see Nuclear Monitor 732, 8 September 2011) **CORE Press Release, 2 December 2011**

- extended reprocessing could potentially impact on the UK's discharge commitments under the OSPAR treaty and could challenge the alpha and tritium target levels under the UK's own Strategy for Radioactive Discharges.
- no interest has been expressed

The NDA's current rejection of closing THORP early under **Option 2** is based on:

- the provision of additional storage capacity for AGR fuel at Sellafield to ensure that incoming fuel from the power stations – at around 180 tons/yr - can be managed
- the possible need to implement alternative arrangements for overseas fuel.
- the requirement to manage spent fuels that are more susceptible to corrosion during storage
- the resultant earlier reduction to the workforce – though this could be mitigated by redeploying workers to the high hazard reduction activities elsewhere on site.

However, the NDA nevertheless believes that the early closure option should continue to be examined because of concerns that should a number of performance risks associated with THORP and its support facilities arise, **Option 1** might have to be abandoned before 2018.

These risks include the overall age and condition of the reprocessing infrastructure, further failures of Sellafield's current suite of Evaporators which process the high level wastes produced by reprocessing – or a delay in bringing on-line of a new Evaporator in 2014/15 – and the viability of the plans to store AGR fuel. The success of these storage plans depends on the current program to

remove redundant multi-element bottles (MEB's used to transport overseas fuel that has now been reprocessed) from the ponds being completed on schedule, and the ponds suitably dosed with a corrosion inhibitor.

Based on THORP's 2018 closure, an application to the Local Authority for a change of use of the ponds from buffer storage prior to reprocessing to interim storage pending disposal is expected to be made around 2016. Subject also to Regulatory approval, the NDA believes a technical and safety case for both storage and disposal of AGR fuel can be made.

In promoting what is likely to be its preferred **Option 1**, the NDA says that by completing THORP's contracts in 2018, it will have honored obligations to overseas customers (and inter-Governmental treaties); provide time to prepare facilities for the interim storage of AGR fuel and create space to receive and manage all fuel arising from AGR stati-

ons. It would also enable fuels susceptible to corrosion to be reprocessed.

The NDA believes the costs of the next 7 years of reprocessing - taking THORP to a 2018 closure - are comparable to those of the storage and direct disposal of spent fuel - largely because the capital costs for the reprocessing infrastructure are already sunk. If this had not been the case *'it would be more cost-effective to cease reprocessing early'*.

As part of its Oxide Fuels Credible Options paper, the NDA was asked by Government to consider the wider impacts of its THORP closure decision on the potential for future reprocessing in the UK. Reviewing topics that included Fast Breeder Reactor prospects, the future use of plutonium and new-build reactor operations, the NDA concluded that the timing of THORP's closure had little material impact on any potential future requirement to supply plutonium; that THORP's closure would neither impact on the UK's new-build program nor on

the long-term potential for reprocessing in the UK. Should the latter be required, a new reprocessing plant would be necessary.

It also concluded that, on a like for like basis, spent fuel storage followed by disposal *'is currently more cost-effective than reprocessing'*. This was based on an anticipated rise in costs of reprocessing and MOX fuel production in the UK, and the currently low price of uranium. Not surprisingly, all cost data was omitted from the NDA's paper on the grounds of commercial confidentiality.

**Source:** CORE Briefing 3/11, 24 November 2011

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## ANOTHER BLOW FOR NUCLEAR: AREVA'S FINANCIAL WOES

**In 2009, multinational financial services corporation Citigroup called nuclear power - with its skyrocketing costs, disastrous economics and dependence on public bailouts - a "corporate killer". Now, in 2011, are we witnessing the slow death of one of the world's largest nuclear companies? French nuclear giant Areva (the French state owns 87 per cent of the company), which designs, builds and exports nuclear reactors is in big financial trouble.**

**(739.6207) WISE Amsterdam** - On December 13, Areva announced that operating losses for this year could reach 1.6 billion euro (US\$ 2.1 bn), primarily as a result of the Fukushima disaster on the value of its uranium mining operations, and that it is sacking up to 1,500 workers in Germany, reducing jobs through attrition in France, freezing wages, and selling some assets while reducing the value of others. Areva will also cut its dividends to investors and its global investment for the next four years by a third. Not only that, the company is suspending planned "capacity extensions" at four nuclear sites in France and scale back planned investment at uranium mines in Africa. Central to Areva's financial woes is a provision for an asset write-down of US\$1.97 billion for property and equipment at its UraMin operations, which include Trekkopje in Namibia, as well as Bakouma in the Central African Republic and Ryst Kuil in South Africa. In addition, Areva slashed its uranium resource estimates at Trekkopje by nearly 42 per cent, the

Trekkopje deposit is now estimated to carry only 26 000 tons of uranium - down from 45 200 tons previously. Trekkopje was expected to reach full capacity next year, producing 3 000 tons of uranium a year. In February this year, however, Areva said full production would be delayed until 2013, because of the "complexity" of the project.

### **Eagle Rock**

Areva chief executive Luc Oursel also announced to halt work at its Eagle Rock enrichment plant near Idaho Falls in the US. Oursel's move to stop work at the Eagle Rock plant abandons an effort which includes an NRC license granted in October to build and operate the plant and a conditional commitment by the U.S. Department of Energy for a US\$2 billion loan guarantee. The total cost of the plant is estimated to be between US\$2.5 and US\$3 billion. The federal loan guarantee covers US\$2 billion of the costs. Oursel says that if the project is economically viable, investors will be found for the remaining

US\$1 billion. In October Areva postponed ground breaking to spring 2012. Its U.S. office assured the media that it planned to move ahead with the project saying that it was too late in the year to mobilize a contractor in the face of the oncoming harsh Idaho winter. Economic development leaders in Idaho Falls were skeptical having long experience with that environment. However, they had little choice but to accept the firm's explanation. And the combination of the NRC license and loan guarantee made the plant look like a sure thing from a financial perspective.

### **UraMin**

Besides the shut down of Trekkopje, (an announcement every informed mining analyst was expecting for some months) Areva also announced the shut down of their South American, West African and South African operations. In a comprehensive statement, Areva says it will reconsider its entire uranium operation conducted under Uramin. While the statement is full of legalese and mine-

ralogical terminology, the message it conveys is that Areva has lost money by the billions and is forced to reconsider and reconsolidate its financial position before re-opening any of their uranium operations. The overall tone is negative.

The company paid 1.8bn Euro for UraMin, a Canada-based company with assets in Namibia, the Central African Republic and South Africa, when uranium was about US\$138 a pound. Today the commodity used to power atomic reactors is trading at about US\$50 after demand slumped following this year's nuclear disaster in Japan.

#### **Hubris vs. Nemesis**

So, what is happening to Areva? Simply put, with the likes of Germany, Belgium, Italy and Switzerland turning their backs on nuclear power, and public opinion hardening against nuclear power in the aftermath of Fukushima (not least in Areva's native France), the company is facing a fast dwindling number of countries willing to buy its massively expensive and incredibly complex nuclear reactors. It's currently building four of its next generation EPRs (European –often mentioned Evolutionary- Pressurised Reactors) in Finland, France and China.

The Finnish and French reactors are years behind schedule and billions of euros over budget. Meanwhile, the two EPRs being built in China are suffering the same construction defects and safety concerns. (see Nuclear Monitor 735, October 21 2011)

It's a classic case of hubris meeting nemesis. Areva bet the farm by hoping it would sell 50 new nuclear reactors this decade. It hasn't received a single order for a reactor since 2007. Apart from the UK, whose own nuclear reactors are increasingly delayed, nobody in Europe wants to buy Areva reactors. Areva hopes to sell the EPR to India but the country's nuclear power ambitions are currently strongly opposed by the public and liability in case of nuclear accidents. Add to that the global financial situation (there has yet to be a nuclear reactor anywhere in the world built without public cash which is in short supply right now) and it doesn't add up to a recipe for nuclear success.

#### **Investments**

The company plans to cut new capital investment to 7.7bn euro between 2012 and 2016, a reduction of around a third on investment over the previous five

years. This could represent a blow to the UK's plans for a new fleet of nuclear reactors, given that Areva was one of the main firms expected to support new projects.

Areva's new chief executive Luc Oursel was appointed in June after the Fukushima accident forced Areva to drop its financial targets and as its long-serving CEO Anne Lauvergeon was battling with project delays and cost overruns, and a public spat with nuclear giant EDF. Oursel said on December 13, he expected Areva to win 10 new orders for the EPR between 2012 and 2016.

**Source:** Financial Times (UK), 13 December 2011 / Reuters, 13 December 2011 / / Idaho Samizdat: Nuke Notes, blog, 13 December 2011 / www.Businessgreen.com, 13 December 2011 / The Namibian, 14 December 2011 / Nuclear reaction, Greenpeace blog, 16 December 2011 / Namibia Economist, 16 December 2011

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## **THE REVIEW PROCESS IN SWEDEN FOR MANAGEMENT OF SPENT NUCLEAR FUEL**

**On 16 March 2011 the Swedish Nuclear Fuel and Waste Management Company (SKB) ([www.skb.se](http://www.skb.se)) submitted applications to build a final storage facility for spent nuclear fuel, called KBS-3, at Forsmark. This is the only public review process in the world for dealing with a spent fuel management proposal submitted for legal review by the nuclear industry. Comments from anyone anywhere in the world may be submitted to the Swedish Radiation Safety Authority and the Environmental Court.**

**(739.6208) Milkas** - Two applications KBS-3 at Forsmark were made by SKB: one to the Swedish Radiation Safety Authority (SSM) according to the Nuclear Activities Act and one to the Environmental Court according to the Environmental Code. The applications are together about 9,000 pages of which about 2,000 pages are the same. Some of all this material is in English and some in Swedish. The volume has been growing steadily as translations have been made between the two languages, errata submitted and numerous associated documents added.

Further, in April 2010 the Swedish Government requested a review by the Organisation for Economic Cooperation and Development Nuclear Energy Agency (OECD NEA). The review is

administered by SSM. The OECD NEA appointed a 10 member international review team that began working in May 2011, with Michael Sailer from the Öko-Institut in Germany as Chairman.

The Environmental Court and SSM have only published the respective application submitted to them on their respective websites. Both applications are published on SKB's website. However, it is only the Swedish NGO Office for Nuclear Waste Review (MKG) that has published both applications as well as all associated documents for both applications on their website. The Environmental Court and SSM, with one exception, only publish an index of documents associated with the respective application that they received – not the full documents as MKG does. The ex-

ception is the documents for the OECD NEA review, which SSM is publishing. However, both the Environmental Court and SSM will provide printed documents on request for a fee and some documents by e-mail at no charge.

#### **Schedules**

The first stage in the review processes of both the Environmental Court and SSM is examination of completeness of the respective application submitted. The Environmental Court has requested "comments regarding the need for any supplementary information." SSM requests comments on "the quality of the application, e.g. whether or not there are deficiencies in the documentation." The current deadlines for comments regarding needs for additional information are 1 June 2012 for public comments to

SSM and 16 April 2012 to the Environmental Court for everyone except the Municipalities of Oskarshamn and Östhammar, which have until 1 June 2012 (the same deadline given to everyone by SSM). SSM is a main consultation body for the Environmental Court and has been given until 1 November 2012 to submit its comments. The Swedish National Council for Nuclear Waste, a committee under the Ministry of the Environment, has also until 1 November 2012.

After any required additional information is incorporated, the Environmental Court currently expects to release the revised application for public comment at the end of 2013, and hold a "main hearing" in the early fall of 2014. The "main hearing" is for oral presentations and is open for the public to make pre-registered submissions and to attend. This schedule assumes the unlikely occurrence that SKB will be able to comply with requests for additional information within only a few months. The OECD NEA review is scheduled to be completed by June 2012. The review team has not solicited comments from the public though SSM forwards comments from interested parties to the review team. The OECD NEA International Review Team held hearings of SKB

in Stockholm 12, 13 and 15 December 2011 and commented on preliminary findings on 16 December 2011, when a 15 minute question session with the team Chairman was allowed. SSM invited a limited number of observers to participate in these sessions, including representatives from the three environmental groups (Milkas, MKG and SERO) that receive funding from the Nuclear Waste Fund to participate in the overall review process. All the sessions were webcast (see below).

The Swedish Environmental Protection Agency has responsibility regarding the Espoo Convention to circulate SKB's revised application according to the Environmental Code (i.e. earliest at the end of 2013).

#### Contact Information

\* Milkas coverage of the review process: [www.nonuclear.se/kbs3](http://www.nonuclear.se/kbs3)

\* Swedish NGO Office for Nuclear Waste Review (MKG), [www.mkg.se](http://www.mkg.se)

\* Swedish Radiation Safety Authority (SSM), [www.ssm.se](http://www.ssm.se): comments should be sent to [registrator@ssm.se](mailto:registrator@ssm.se) in order to be entered into SSM's index system.

\* Information on the OECD NEA review is at:

[www.stralsakerhetsmyndigheten.se/Allmanhet/slutforvar/Internationell-](http://www.stralsakerhetsmyndigheten.se/Allmanhet/slutforvar/Internationell-expertgranskning/)

[expertgranskning/](http://www.stralsakerhetsmyndigheten.se/In-English/) The page is in Swedish but all the attached files are in English, which are at [www.mkg.se/ssm-20104132-internationell-expertgranskning](http://www.mkg.se/ssm-20104132-internationell-expertgranskning)

\* The webcast archive of the sessions 12, 13, 15 and 16 December 2011 can be found via:

[www.stralsakerhetsmyndigheten.se/In-English/](http://www.stralsakerhetsmyndigheten.se/In-English/)

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Nacka District Court, Land and Environmental Court, [www.nackatingsratt.domstol.se/Funktioner/English/The-Swedish-courts/District-court/Land-and-Environment-Courts/](http://www.nackatingsratt.domstol.se/Funktioner/English/The-Swedish-courts/District-court/Land-and-Environment-Courts/). Comments should be sent to [mmd.nacka@dom.se](mailto:mmd.nacka@dom.se) in order to be entered into the Environmental Court's index system.

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## MORE "HOT" WASTE PLANNED FOR WIPP

**The United States' Department of Energy (DOE) is proposing to bring more "remote-handled" plutonium-contaminated waste to the Waste Isolation Pilot Plant than will fit in the remaining designated space. Shielded containers at WIPP should allow more remote-handled waste that is dangerous to transport, store, and dispose. Despite what DOE says, shielded lead containers could not be handled like contact-handled waste because damaged or leaking containers could not be overpacked. It is another attempt by DOE to expand the mission of WIPP beyond its original purpose.**

**(739.6209) Concerned Citizens for Nuclear Safety** - DOE has applied to the New Mexico Environment Department for a modification of the hazardous waste permit in order to dispose of "shielded containers" of remote-handled (RH) waste. The shielded containers, which have never been used before, are lead-lined in order to contain the high gamma emissions from the RH waste.

In 1999 when the Department of Energy opened the Waste Isolation Pilot Plant (WIPP), remote-handled (RH) plutonium-contaminated transuranic waste was prohibited. In 2007, the RH waste was allowed to be disposed with restrictions imposed by the New Mexico Environment Department. Even so, DOE has not shipped RH waste as rapidly as

planned in order to use the available space drilled into the walls of the underground repository. Consequently about one-half of the planned RH space cannot be used because "contact-handled" waste was placed on the floors of the repository rooms. Contact-handled, or CH, waste has a surface dose limit of 200 millirems per hour, while RH waste can have a surface dose rate of up to 1,000 rems per hour. DOE plans to handle the RH shielded containers as if they were CH containers.

Because of DOE shipping and disposal practices over the past 12 years, the amount of underground space for RH waste at WIPP has been substantially reduced. DOE does not even know how much RH waste it has to bring to WIPP, when the waste would be ready

to be shipped, or whether more than the remaining capacity is needed.

One additional issue is that DOE stated in its draft Greater-than-Class C waste environmental impact statement that it would use shielded containers to bring commercial waste, much of which is more radioactive than RH waste, to WIPP. Thus, DOE plans to use shielded containers could expand WIPP beyond its legal mission of disposal of up to 175,564 cubic meters of defense transuranic waste, the limit set by the WIPP Land Withdrawal Act of 1992.

DOE submitted the shielded container request as a class-2 permit modification, which allows for a 60-day public comment period. Within 30 days, which can be extended to 60 days, the

Environment Department must approve, deny, or decide to use the more robust class-3 procedures.

Given the dangers of RH waste, the need for much more information, and public concern about RH waste,

Concerned Citizens for Nuclear Safety (CCNS) and other non-governmental organizations are asking that the shielded containers be a class-3 modification request, which provides for more extensive public comment and an opportunity for a public hearing.

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# BELGIUM: NEXT NUCLEAR DOMINO TO FALL

**In the early 1960, the Nuclear Research Center (SCK) in Mol accommodated the very first PWR in Europe. In the late 1960, without any political or public debate, the Belgian government decided at one single minister council meeting to launch a nuclear power program. Just like France, the intention was to build up a 100 percent nuclear electricity system. In the small and very densely populated country, it was not easy to find suitable sites. Finally, two sites were selected: Doel, near the Schelde river, at only 11 km from the city of Antwerp with half a million inhabitants; and Tihange, near the Meuse river at only 3 km from the city of Huy.**

**(739.6210) Greenpeace Belgium** - In 1975, the three first reactors were connected to the grid: Doel 1 and Doel 2 (500 MW each) and Tihange 1 (1.000 MW). All of them were second generation PWR's from US and French design. Between 1982 and 1985 four more 1.000 MW reactors were build: two at Doel and two more at Tihange. The construction works for the eight Belgian nuclear reactor were stopped in 1986, due to the Chernobyl disaster. From that moment onwards the consecutive federal governments put a moratorium on new reactors.

## Turning point: 2003 nuclear phase-out law

The elections of 1999 brought a political earthquake. The Christian democrats moved, after many decades of power, to the opposition and a coalition of liberals, social democrats and greens took over. The greens managed to get the nuclear phase-out into the governmental agreement and on the initiative of the green energy secretary of state the parliament voted with a vast majority in 2003 the nuclear phase-out law.

The 2003 phase-out law stipulates that all seven commercial nuclear power reactors will be decommissioned after 40 years of operation. This gives the following calendar:

Reactor	start-up	closure
Doel 1 (500 MW)	1975	2015
Doel 2 (500 MW)	1975	2015
Tihange 1 (1.000 MW)	1975	2015
Doel 3 (1.000 MW)	1982	2022
Tihange 2 (1.000 MW)	1983	2023
Doel 4 (1.000 MW)	1985	2025
Tihange 3 (1.000 MW)	1985	2025

However, in order to get the liberals to vote the law, a paragraph was added, stating that the lifetime of the reactors could be extended if the security of supply would be endangered.

## The nuclear lobby at its best

After the federal elections of June 2003, a few months after the phase-out law was voted, a new government of liberals and social democrats, but without greens, was formed. This new government confirmed the phase-out law in its governmental agreement, but did nothing to initiate replacement capacity. Electrabel (now taken over by GDF-Suez) and the Nuclear Forum started an unseen PR-offensive. The elections of 2007 brought the Christian democrats back in power in a conservative coalition with liberals and Flemish nationalists. One of the first statements of the new prime minister Leterme was that he would go for a ten years lifetime extension of the three oldest reactors and twenty years for the four other reactors. In October 2009 prime minister Van Rompuy, who succeeded Leterme, signed a draft protocol with GDF-Suez CEO, Mestrallet, in which they agreed to extend the lifetime of Doel 1, Doel 2 and Tihange 1 with ten years in exchange for a yearly nuclear tax of 250 million euro. This was a gift to the French multinational, because the Belgian energy regulator, CREG, calculated the windfall profits for GDF-Suez at 2,1 billion euro. This protocol, however, had no legal basis as long as the 2003 nuclear phase-out was not changed. So the government prepared a new law proposal. But in March 2010, before the new law

had been presented to the parliament, the government fell. At the elections, the voters reshuffled the political cards so drastically, that it finally took more than one and a half year before a new government with full competences to change the law could be formed (a government-of-current-affairs is not entitled to change the law).

## Fukushima created a new awareness

The nuclear disaster in Fukushima created a new awareness, not only in the public's mind, but also within the political parties. An opinion poll showed that 66% of the citizens wanted the nuclear power stations to close as foreseen in the 2003 phase-out law, only 21% opposed. 76% preferred investments in renewables over lifetime extension of nuclear reactors. October 2011 brought a breakthrough in the political impasse and finally, in December, after more than one and a half year, a new government of social democrats, christian democrats and liberals was formed.

The governmental agreement stipulates that the 2003 nuclear phase-out law will be respected, but the exact closing date of the three oldest reactors would depend on the availability of replacement capacity. Within six months, i.e. by May 2012, a study will be made about when the replacement capacity will be ready to come on line. It will than, depend on the government to decide whether to stick to the original decommissioning calendar (2015 for the three oldest reactors) or to extend the lifetime of (some of) those reactors with a couple of years. Because they agreed to respect the principle of the phase-out, an automatic lifetime extension of ten years, as wanted by GDF-Suez Electrabel, is out of the question. GDF-Suez Electrabel

plays it very hard by blackmailing the government. They threaten to disinvest in Belgium and to withdraw their administrative center out of the country. They also oppose the governmental decision to increase the nuclear tax from 250 to 510 million euro.

A lot now will depend on the political decision of the new secretary of state responsible for Energy, the christian democrat Wathelet, who has always been a rather pro-nuclear guy.

#### **There is already enough replacement capacity**

The three oldest reactors produce

some 16% of the electricity in Belgium. A report on energy efficiency commissioned by Greenpeace shows that there is an unused electricity saving potential that can be realized on the short term at low cost, covering 2/3 of the capacity produced by the three oldest reactors. The Dutch electricity producing company Eneco declares that it has all the environmental and construction licenses for the construction of two steam and gas plants with the capacity of Doel 1 and Doel 2. However, they will not start the construction as long as they are not sure that the oldest nuclear reactors will be closed in 2015. As a matter of fact, it is the government itself who can

determine whether or not there will be enough replacement capacity. If they would take right now the clear decision that the three oldest reactors will be closed in 2015 and not one year later, other electricity companies would be eager to establish themselves on the Belgian market. As long as the door for a lifetime extension of even only a few years is kept open, nobody will move.

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## IN BRIEF

**Little support for nuclear power worldwide.** There is little public appetite across the world for building new nuclear reactors, a poll for the BBC indicates. In countries with nuclear programmes, people are significantly more opposed than they were in 2005, with only the UK and US bucking the trend. Most believe that boosting efficiency and renewables can meet their needs. Just 22% agreed that "nuclear power is relatively safe and an important source of electricity, and we should build more nuclear power plants". In contrast, 71% thought their country "could almost entirely replace coal and nuclear energy within 20 years by becoming highly energy-efficient and focusing on generating energy from the Sun and wind". Globally, 39% want to continue using existing reactors without building new ones, while 30% would like to shut everything down now.

The global research agency GlobeScan, commissioned by BBC News, polled 23,231 people in 23 countries from July to September this year, several months after Fukushima. GlobeScan had previously polled eight countries with nuclear programmes, in 2005. In most of them, opposition to building new reactors has risen markedly since. In Germany it is up from 73% in 2005 to 90% now - which is reflected in the government's recent decision to close its nuclear programme. More intriguingly, it also rose in pro-nuclear France (66% to 83%) and Russia (61% to 83%). Fukushima-stricken Japan, however, registered the much more modest rise of 76% to 84%. In the UK, support for building new reactors has risen from 33% to 37%. It is unchanged in the US, and also high in China and Pakistan, which all poll around the 40% mark. Support for continuing to use existing plants while not building new ones was strongest in France and Japan (58% and 57%), while Spaniards and Germans (55% and 52%) were the keenest to shut existing plants down immediately.

In countries without operating reactors, support for building them was strongest in Nigeria (41%), Ghana (33%) and Egypt (31%).

**BBC News, 25 November 2011**

**Short list for Poland's first n-power plant.** Poland's largest utility PGE on 25 November announced a short list of three sites for Poland's first nuclear plant. The utility intends to conduct more studies at Choczewo, Gaski and Zarnowiec over the next two years, with a final decision expected in 2013. Poland has signalled its intention to potentially build two nuclear plants with a combined capacity of up to 3GW. PGE plans to commission the first plant, at a projected cost of 18 billion euro (\$23.7bn), in 2020-22.

Meanwhile PGE has withdrawn from nuclear developments in Lithuania and the Russian exclave of Kaliningrad to focus on domestic opportunities. PGE has suspended its involvement in building the Visaginas nuclear plant, near Ignalina, in Lithuania. The move ends hopes that the project will be jointly developed by Lithuania, Latvia, Estonia and Poland. PGE said it suspended its involvement after analysing the offer from Lithuanian firm VAE, which is lead investor in the project. VAE plans to build the 5,5bn (\$6.6bn) plant by 2020 next to the site of the Ignalina nuclear station, which was shut in 2009.

**Argus Media, 12 December 2011**

**TEPCO: Radioactive substances belong to landowners, not us.** During court proceedings concerning a radioactive golf course, Tokyo Electric Power Co. stunned lawyers by saying the utility was not responsible for decontamination because it no longer "owned" the radioactive substances. "Radioactive materials (such as cesium) that scattered and fell from the Fukushima No. 1 nuclear plant belong to individual landowners there, not TEPCO," the utility said.

That argument did not sit well with the companies that own and operate the Sunfield Nihonmatsu Golf Club, just 45 kilometers west of the stricken TEPCO plant in Fukushima Prefecture. The Tokyo District Court also rejected that idea. But in a ruling described as inconsistent by lawyers, the court essentially freed TEPCO from responsibility for decontamination work, saying the cleanup efforts should be done by the central and local governments. TEPCO's argument over ownership of the radioactive substances drew a sharp response from lawyers representing the Sunfield Nihonmatsu Golf Club and owner Sunfield. "It is common sense that worthless substances such as radioactive fallout would not belong to landowners," one of the lawyers said.

"We are flabbergasted at TEPCO's argument." The golf course has been out of operation since March 12, the day after the Great East Japan Earthquake and tsunami set off the nuclear crisis. Although the legal battle has moved to a higher court, observers said that if the district court's decision stands and becomes a precedent, local governments' coffers could be drained. The two golf companies in August filed for a provisional disposition with the Tokyo District Court, demanding TEPCO decontaminate the golf course and pay about 87 million yen (\$1.13 million) for the upkeep costs over six months.

**Asahi Shimbun Weekly, 24 November 2011**

**The powers that be.** U.K.: at least 50 employees of companies including EDF Energy, npower and Centrica have been placed within government to work on energy issues in the past four years. The staff are provided free of charge and work within the departments for secondments of up to two years. None of the staff on secondment in the Department of Energy and Climate Change (Decc) work for renewable energy companies or non-governmental organizations, though a small number come from organizations such as the Carbon Trust, the Environment Agency and Cambridge University.

There have also been 195 meetings between ministers from the Decc and the energy industry (and 17 with green campaign groups) between the 2010 general election and March 2011, according to a Guardian analysis of declared meetings with Decc. Centrica met ministers seven times, EDF and npower fives times each, E.ON four times and Scottish and Southern just three times. "Companies such as the big six energy firms do not lend their staff to government for nothing - they expect a certain degree of influence, insider knowledge and preferential treatment in return," said Caroline Lucas. The Green party MP asked under the Freedom of Information Act, several key government departments to tell more about staff secondments - private companies and other organisations sending staff to advise and work with the government.

Secondments also work in reverse, with civil servants going to work in the energy industry, such as a two-year secondment to Shell and another to Horizon Nuclear Power, a joint venture of E.ON and RWE npower that aims to build nuclear power stations in the UK.

**Guardian (UK), 5 December 2011**

#### **Anti-nuclear protestors take out rally against Koodankulam.**

India: about 10,000 anti-nuclear protestors today took out a procession from a temple at nearby Koodankulam to this town and staged a peaceful demonstration, condemning Prime Minister Manmohan Singh's statement that the nuclear power project would be operationalised in a couple of weeks and resolved to picket the plant if work resumed. Pushparayan, Convenor of People's Movement Against Nuclear Energy (PMANE), which is spearheading the stir, said the organisation would intensify its agitation from January 1 if their demand for removing the fuel rods loaded into the reactor were not removed by that date. Earlier in the day, PMANE condemned Singh's 'anti-people' and 'autocratic' statement on KNPP (Koodankulam Nuclear Power Project), saying it betrayed the fact that the state government's resolution to halt work was never honoured earnestly or implemented effectively. One of the 'leaders' of the anti-Koodankulam fight, long-time anti-nuclear activist, Mr Udayakumar is awaiting the consequences of the sedition charges that have been filed against him for his anti-Koodankulam activities. Given the number of charges he is facing ("55 to 60 cases"), Mr Udayakumar said he did not know why he has not yet been arrested. Charges have reportedly been filed against Mr Udayakumar under sections 121 and 124A of the Indian Penal Code, which carry possible sentences of life in prison or even death. But he said he was not particularly concerned. "I haven't done anything wrong or bad or harmful to the country. I am fighting for something just. So no, I am not worried."

**Statesman (India), 16 December 2011 / www.lbnlive.in.com, 18 December 2011**

**Saudi Arabia not excluding nuclear weapons program.** Saudi Arabia may consider acquiring nuclear weapons to match regional rivals Israel and Iran, its former intelligence chief Prince Turki al-Faisal said on December 5. Israel is widely held to possess hundreds of nuclear weapons, which it neither confirms nor denies, while the West accuses Iran of seeking an atomic bomb, a charge the Islamic republic rejects. Riyadh, which has repeatedly voiced fears about the nuclear threat posed by Shiite-dominated Iran and denounced Israel's atomic capacity, has stepped up efforts to develop its own nuclear power for 'peaceful use.'

"Our efforts and those of the world have failed to convince Israel to abandon its weapons of mass destruction, as well as Iran... therefore it is our duty towards our nation and people to consider all possible options, including the possession of these weapons," Faisal told a security forum in Riyadh.

Abdul Ghani Malibari, coordinator at the Saudi civil nuclear agency, said in June that Riyadh plans to build 16 civilian nuclear reactors in the next two decades at a cost of 300 billion riyals (\$80 billion). He said the Sunni kingdom would launch an international invitation to tender for the reactors to be used in power generation and desalination in the desert kingdom.

**AFP, 5 December 2011**

**Netherlands, Borssele 2 delayed (or canceled?).** Delta, the regional utility in Zeeland wants to build a new nuclear power plant in the Netherlands, near Borssele (see NM 728, June 17 2011). The company was looking for approval from the stakeholders (province of Zeeland and municipalities) for investing 110 million euro in obtaining the license, but it decided on December 15, to withdraw the funding proposal from the agenda of the stakeholders meeting on December 22. Delta will delay the decision by half a year to present partners for the project first. Most likely candidates are German RWE and French EDF, but both have some financial difficulties.

Strong rumors that stakeholders will pull the plug out the project totally, could not be confirmed before deadline of this issue, but it looks like Boerma the current Delta CEO, will be forced to step down.

## 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).

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This is the last issue the Nuclear Monitor in 2011. We wish you all a happy and healthy holiday season. We will be back with the first issue of Volume 34 (approximately) in January 2012

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