

Plans for Russian uranium payments stir fears of nuclear proliferation

Paris. Russia may provide highly enriched uranium (HEU) to two research reactors in France as its subscription fee to research programmes at the two centres, according to an agreement on nuclear materials reached last month by France and the Russian ministry of atomic energy.

But groups supporting nonproliferation claim that the plan flies in the face of international efforts to reduce civilian commerce in weapons-grade nuclear material, and would increase the risk of such material falling into terrorist hands.

Final details have yet to be agreed. But as part of the agreement, Russia would supply HEU to the Orphée reactor, which is owned by the French Atomic Energy Commission (CEA), and the 58.3-MW reactor at the Institut Laue-Langevin (ILL) in Grenoble — the world's most powerful neutron source (see *Nature* 379, 284; 1996).

ILL is owned by France and Germany — each pay annual subscriptions of around FF100 million (US\$20 million) — and the United Kingdom, which pays about FF67 million. The reactor also has three 'scientific members', Austria, Spain and Switzerland, which contribute a total of around FF20 million annually.

Under the proposed agreement, Russia would also be given the status of scientific member, according to Reinhard Scherm, director of ILL, who says that Russian membership will provide an important scientific boost to ILL's activities. Russia would pay its fee in HEU; the precise amount of HEU involved in the deal has not been disclosed, but ILL consumes around 45 kg a year.

ILL has been seeking new partners since the United Kingdom reduced its annual subscription from a third to a quarter in 1992, forcing ILL to reduce the number of its beamlines and to make 80 of its 500 staff redundant. It is now actively wooing Italy, according to Scherm.

But the prospect that Russia will pay for its membership in HEU has provoked fierce protests. Paul Leventhal, president of the Nuclear Control Institute (NCI) — a lobby group based in Washington DC — describes the proposal as a "direct assault" on the 1978 international agreement on Reduced Enrichment for Research and Test Reactors (RERTR). This is aimed at phasing out the use of HEU in research reactors, given the danger that the fuel could be used to make nuclear weapons.

The United States has reinforced the RERTR programme by banning the export of HEU to reactors that could be converted

to light-enriched (non-weapons grade) uranium (LEU) but have declined to do so, and also allowing exports to other reactors only on condition that they convert to LEU as soon as is feasible (see *Nature* 369, 89; 1994). This policy has led to a reduction in annual US exports of HEU from more than a tonne in the 1970s to zero.

As a result, nearly all research reactors in Europe and the United States have either converted to LEU or are in the process of doing so. A handful of reactors that could use existing LEU fuels have refused to convert, however, and about a dozen have not converted because suitable LEU fuel substitutes have not yet been developed.

Leventhal argues that if Russia is allowed to provide Europe with HEU, the US ban on HEU exports would no longer be an effective incentive to force research reactors to convert to LEU — until now, the United States had been the almost exclusive supplier of HEU. In a bid to discourage Russia from exporting HEU, US agencies have also begun buying up HEU extracted from Russian warheads and diluting it to LEU.

Russian exports of HEU to Europe

would undermine many of the gains made under the RERTR programme, says Leventhal. Such exports would, for example, enable construction of the controversial FRM-II research reactor outside Munich in Germany (see *Nature* 379, 284; 1996), which would be the first HEU-fuelled research reactor to be built — outside Libya and China — since the establishment of the RERTR programme. And Russian commerce in HEU would defeat longer-term plans to encourage research reactors in Russia and China to convert to LEU.

Attempts to persuade Germany not to use HEU in the FRM-II would be "compromised" if France imports Russian HEU, argues Mycle Schneider of the Paris-based energy and environmental consultancy WISE. "The French deal sets a very bad precedent that goes against all attempts to get rid of civil HEU," he says.

Indeed, Russia is already negotiating the supply of HEU to research reactors in the United Kingdom, Germany, Belgium and the Netherlands, according to Euratom (the European Atomic Energy Community), although formal agreements have not yet ►

UK observatories look to private sector

London. **The British government has announced that private-sector organizations will be invited to bid for the services provided by its 'Royal Observatories', made up of telescopes on Hawaii and the Canary Islands, and instrumentation development and control activities at the Royal Greenwich Observatory in Cambridge and the Royal Observatory Edinburgh.**

The intention is to make more efficient use of the observatories' annual budget of £15 million (US\$10 million), in line with recommendations put forward by the Particle Physics and Astronomy Research Council (PPARC), their legal owner.

PPARC has welcomed the announcement and intends to use any savings or additional income from potential new observatory activity to help fund long-term scientific projects.

But the decision has been criticized by at least one major trade union. Tony

IMAGE
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REASONS

Bell, a negotiator with the Institute of Professionals, Managers and Specialists (IPMS), says that private-sector management of the observatories is not the solution to what he describes as "inadequate funding" for PPARC.

He warns that the move will sound "the death knell" for the Edinburgh and Cambridge organizations, both of which support the Isaac Newton Group of telescopes at La Palma in the Canary Islands (above), and the Joint Astronomy Centre on Hawaii. Ehsan Masood

► been reached. Any such agreement would need to be signed by Euratom, which is responsible for enforcing safeguards on all civil nuclear materials within Europe.

Similarly, Leventhal describes the proposed deal between France and Russia as evidence that France feels immune from international norms on nuclear nonproliferation. "It's just a further attempt by the French to stick a thumb in the eye of the US in the nonproliferation field," he claims.

The United States has applied strong diplomatic pressure to Euratom and Russia to prevent them from opening up trade in HEU. Indeed, some US congressmen had pressed for the United States to block renewal of the US-Euratom agreement — which covers trade in nuclear materials — until Europe and Russia agree not to trade in HEU (see *Nature* 379, 760; 1996).

While such diplomatic pressure is continuing, the signing of the US-Euratom agreement itself represents a setback for US efforts. The agreement contains a letter from Stuart Eisenstat, the US ambassador to Euratom, which states that the United States is "committed to eliminating [the civil use of HEU] over time".

But the letter also states that the United States recognizes "that specific research reactors in the European Atomic Energy Community may, under certain circumstances, need to use highly-enriched uranium as fuel". This loophole is reported to have been included after intense European pressure.

Costas Verros, a spokesman for Euratom, says that the letter is explicit recognition that several European reactors cannot convert to LEU at present. "The matter is settled," says Verros, adding that Euratom has "an obligation to help operators to find the fuel they need". Verros points out that the European Union has signed an agreement with Russia similar to that between Euratom and the United States on the peaceful uses of nuclear technology, and that this allows European countries to seek HEU in Russia.

Declan Butler

Drug company 'suppressed' publication of research

Washington. Controversy over the secrecy demanded of biomedical researchers by pharmaceutical companies captured the limelight again last week, with a report that a company had suppressed the publication of a journal article out of fear that the conclusions would hurt the multi-million dollar sales of one of its products, a thyroid drug.

The story, first reported in *The Wall Street Journal*, tells how the British company Boots Co. apparently succeeded in persuading Betty Dong, a researcher it had funded at the University of California, San Francisco (UCSF), to withdraw a paper scheduled to appear in the *Journal of the American Medical Association (JAMA)*.

Soon after the article was due to have appeared in January 1995, Boots' drug division was bought by Germany's BASF AG, for \$1.4 billion. Synthroid, a drug made by the division which is used in hypothyroidism, and which accounts for 84 per cent of the \$600-million US market for thyroid replacement drugs, is thought to have figured prominently in the price paid.

Boots' huge share of the market reflects the inability of its rivals to prove beyond doubt that their products were 'bioequivalent' to Synthroid. In the 1980s, Boots' drug division — now part of Knoll Pharmaceutical Co., a New Jersey division of BASF — decided to prove its rivals' inferiority for good. The company sought out Dong, a clinical pharmacist, and paid her \$250,000 to carry out a comparative study of Synthroid and three alternative drugs.

But the results were not what Boots expected. Dong and her research team found that the alternatives were 'bioequivalent' — that they were absorbed in the blood in the same way as Synthroid — and that use of the significantly cheaper, equally effective

alternatives would reduce US health-care costs by \$356 million a year.

After several years spent trying to discredit Dong's findings — including hiring private investigators to search her background for conflicts of interest — Boots succeeded in blocking publication, using the fact (which neither side denies) that when Dong began the work, she signed a contract promising the results would not be published "without written consent" of the company. The company allegedly threatened Dong and her colleagues with a lawsuit if she published — an allegation that a Boots executive adamantly denies.

Faced with the prospect of ruinous legal fees, as well as a reversal by UCSF, which initially backed her efforts to publish, but then said it could not because of the legal risk, Dong told *JAMA* to cancel her paper, which was already at the printer. She has not succeeded in finding another publisher.

Meanwhile, Gilbert Mayor, formerly director of medical services for Boots and now the senior director of medical research at Knoll, was the lead author on a lengthy critique of her unpublished findings in the *American Journal of Therapeutics*, of which Mayor is an editor, in June 1995.

Carter Ekert, the Boots executive who instigated Dong's study, told *The Wall Street Journal*: "I stopped a flawed study that would have put millions of patients at risk." Notwithstanding its acceptance by *JAMA* peer reviewers, the company has argued that the study contained mistakes in data analysis and patient management, among other things, due to factors which the reviewers would not have been aware of.

UCSF officials say that the study is "valid" and without "significant" flaws. They add that Dong violated university policy by signing the contract, calling its limitation on her right to publish "not acceptable".

The university also defends its decision not to make its legal resources available to Dong and her colleagues. In its statement, it calls the right to publish "the essence of what a research institution is all about". But, it continues, "the difficulty here is weighing the right to publish against a likely claim against the University for breach of contract and the possibility of significant damages".

Dong told *The Wall Street Journal* that signing the contract was naive, that she ought not to have signed, and that she will not do drug company-sponsored research again. Stephen Rosenberg, the chief of surgery at the National Cancer Institute in Bethesda, Maryland, and a strong critic of biomedical secrecy, says of the episode: "I'm shocked. But I'm not surprised."

Meredith Wadman

Austrian academics fight teaching fee review

Munich. The Austrian research minister, Rudolf Scholten, has invited university academics and students, who have been on strike since Easter, to suggest how the country should save ÖS1 billion (US\$94 million) from the university budget over the next two years.

Scholten's own proposals for making the large savings dictated by Austria's financial crisis had been greeted with horror by students, who could lose privileges such as free public transport, and by academic staff, particularly the so-called *Mittelbau*, equivalent to assistant and associate professors, who could lose a large proportion of the generous teaching fees on which they rely

because most are employed by universities only part-time.

Scholten wants to save nearly half of his ÖS1 billion target by paying low fees — or no fees at all — to those who give a few lectures a term, and then pay progressively higher fees for more teaching hours. This is opposed by groups such as the Federal Conference for Scientific Staff, which argues that this system would encourage young academics to neglect research in favour of doing more teaching to maintain their income.

But Scholten argues that the quality of Austrian research has already suffered from the current system of piece-work.

Quirin Schiermeier