

Ux

WEEKLY

The spot market during the first quarter is probably best characterized by its lack of activity. Sustained mid- and long-term contracting levels over the past four years have contributed to an overall decline over the past couple of years in the uncovered positions that utilities normally reserve for spot purchases. Even spot price, which traditionally faces its greatest upward pressure during the first quarter, witnessed a decline due to this reduced demand level. Below is a review of first quarter spot market activity (or lack thereof).

First Quarter Recap – A total of nine transactions for 3.9 million pounds U₃O₈ equivalent were reported during the past quarter (see summary table on page 3). This volume level, while similar to that seen in 2000 and 2001, does not accurately describe the overall decline in spot activity so far this year. Over half of the volume was contributed by a single buyer, which entered the market in late 2002. In fact, only five

buyers have been identified as awarding deals during the quarter.

Comparatively, we saw almost thirty transactions for 7.8 million pounds U₃O₈e transacted in the first quarter of last year. Another interesting difference from last year is that none of the volume this year has thus far been attributed to off-market deals, while well over half the volume last year was contributed to this method. Discretionary purchases have also been down, coming in at only 12% of the volume compared with almost 30% during the first quarter last year (and an overall 47% for the entire year).

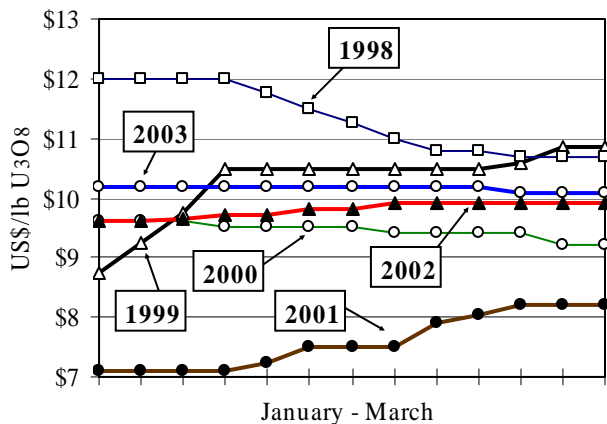
Similar demand levels were seen in both 2000 and 2001, however price movements diverged in these two years. The difference, as shown in the chart below, is that 2000 started in the upper \$9 range and moved slightly down during the quarter, while, in 2001, the price began in the low \$7 range and moved up, recovering from the downward spiral in 2000. This year the spot price quickly returned to its flattened posture of 2002 after seeing a bump up in price late last year. As additional demand failed to materialize, downward pressures were felt near the end of the quarter. The Ux U₃O₈ Price started January at \$10.20, declining a dime early last month to end the quarter at \$10.10 per pound. The Ux RU U₃O₈ Discount remained unchanged during the quarter at \$0.20 per pound.

In other statistics, straight U₃O₈ purchases accounted for 60% of the volume, while UF₆ made up the remaining 40%. The continued presence of UF₆, while not as aggressively offered as last year, is still large enough to keep price in check. Given the scarcity of spot enrichment supplies, it is not surprising to see no EUP deals reported. The average leadtime before the first delivery was 4.3 months, below the historical 6-month average and lower than last year's average of 5.7 months. U.S. utilities remain the primary buyers with non-U.S. utilities and producers each accounting for almost a quarter of the purchase volume.

Second Quarter Outlook – Volume-wise, the second quarter is shaping up to be similar to the first, with one spot to mid-term procurement that is currently underway potentially accounting for a large share of the volume, although some of the volume is out beyond the one-year timeframe for a spot deal. Besides this demand, there are a couple of buyers that have been consistently active on the spot market. These same buyers are expected to remain active during the second quarter; both recently reentered the market.

As for price, little movement is expected next quarter and we could see a repeat of the first quarter. Although demand is not great—suggesting that price could come under some weakness, neither is supply. While price could increase somewhat in the presence of higher demand, the large procurement that is currently underway is less likely to produce a bump-up in price similar to the scenario late last year.

Comparison of 1st Quarter Spot Prices



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**Weekly
Ux U₃O₈
Price**

\$10.10
(Unch.)

NEWS BRIEFS

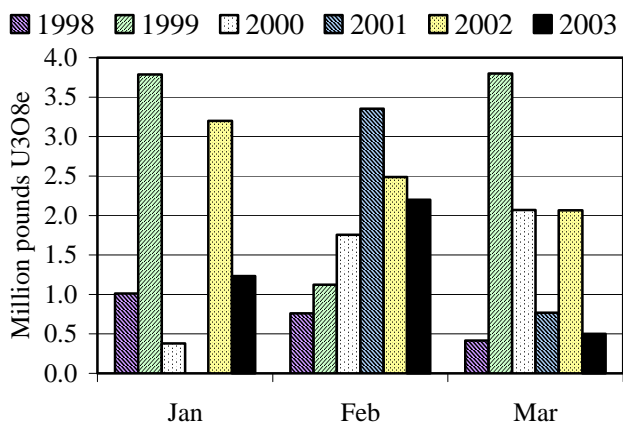
Potential contractors submit proposals to build Finland's fifth reactor – A range of companies have submitted proposals to build Finland's fifth nuclear reactor, according to Teollisuuden Voima Oy (TVO), the utility that will own and operate the reactor. However, TVO did not specify which companies submitted bids. One company known to have submitted a bid for the contract is Framatome ANP, which has offered to build either the EPR, an advanced pressurized water reactor or the SWR 1000, an advanced boiling water reactor. At least two other companies are believed to have submitted bids: General Electric and Russia's Atomstroyexport. TVO plans to select a contractor for the project before the end of the year. The reactor is scheduled to begin operation in 2009. The size of the unit will be between 1,000 and 1,600 megawatts.

In related news, Alstom, a French engineering firm, has won a €35 million contract to upgrade two high pressure turbines at the Olkiluoto nuclear power plant. The upgrades are scheduled to occur in 2005 and 2006.

Five companies competing to build Bulgaria's Belene nuclear plant – On April 1, Bulgaria's Energy Ministry said that five companies are showing interest in the planned construction of the new Belene nuclear power plant, located on the Danube River. The five companies competing for Bulgaria's business are the U.S.' Westinghouse (a subsidiary of Britain's BNFL), Atomic Energy of Canada Ltd., France's Framatome SA, Czech Republic's Skoda and Russia's Atomstroyexport. In an interview with *Dow Jones Newswire*, a ministry spokesman said, "We have been in talks with these companies over their nuclear reactor parameters. The ministry will examine the information they have provided and launch a tender toward the end of the year."

In December 2002, Bulgaria's government decided to

Comparison of 1st Quarter Monthly Spot Volumes



— Industry Calendar —

Details at: http://www.uxc.com/fuelcycle/uxw_industry-calendar.html

- **Apr 6-9, 2003** – NEI Fuel Cycle 2003 will be held in Baltimore, MD.
- **May 4-7, 2003** – ANS Advanced Nuclear Power Plants (ICAPP 2003) International Congress will be held in Cordoba, Spain.
- **May 11-15, 2003** – WNA Mid-Term Meeting will be held in Moscow, Russia.
- **May 19-20, 2003** – Utility Nuclear Fuel Economics Group Meeting will be held in Baltimore, MD.
- **Jun 8-10, 2003** – WNFN 30th Annual Meeting will be held in Boston, MA.
- **Jun 23-26, 2003** – IAEA International Conference on Innovative Technologies for Nuclear Fuel Cycle and Nuclear Power will be held in Vienna, Austria.
- **Sep 3-5, 2003** – WNA 28th Annual Symposium will be held in London, UK.
- **Oct 12-15, 2003** – NEI International Uranium Fuel Seminar will be held in San Diego, CA.

resume the planned construction of the Belene nuclear plant to compensate for losses in electricity that will result from the closing of four of the six reactors at the 3,760 megawatt Kozloduy nuclear plant. Kozloduy 3 and 4 are expected to close in 2006, but the government is seeking an extension of this deadline set by the European Union (EU) as a concession for gaining EU membership in 2007. Kozloduy 1 and 2, each with a capacity of 440 megawatts, were decommissioned at the end of 2002 despite public opposition.

Construction of the Belene nuclear plant started in the 1980's. The majority of the equipment for the originally planned 1,000-MW Soviet-designed reactor was already delivered and around 40% of the construction work was completed before the project was halted in 1992 due to a lack of funds and environmental protests. Over US\$1 billion has been invested in the plant thus far. Energy Minister Milko Kovachev said two months ago that construction estimates to complete the plant are around US\$1 billion. The energy ministry said that a decision on the capacity of the new plant, the number and type of its reactors will be based on the offers and information submitted by the five competing companies.

Nuclear generates almost 40 percent of Switzerland's electricity – According to *Platts*, Switzerland's Federal Energy Office concluded that in the period from October 2001 to September 2002 nuclear en-

NEWS BRIEFS cont...

ergy accounted for 39.7 percent of Switzerland's electricity production. An additional 56 percent of Switzerland's electricity came from hydroelectric power, and the other 4.3 percent of its electricity came from other forms of generation. Next month, Swiss citizens will vote on a series of nuclear-related issues including whether to shut down currently operating nuclear reactors and whether or not to extend a ban on constructing new reactors.

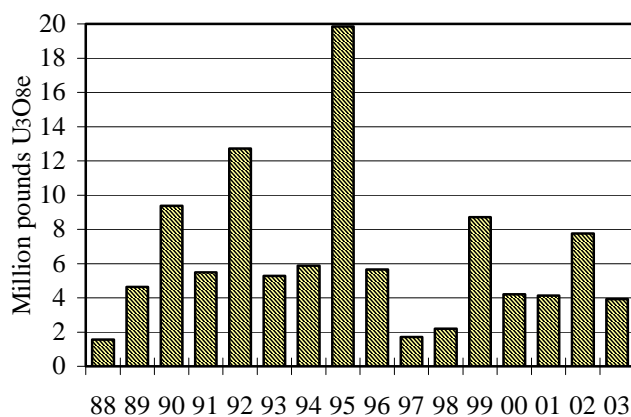
Enel looking to French market – The Italian electricity group, Enel, and Electricité de France (EDF) are reportedly in negotiations which could result in Enel assuming an interest in the French energy market. Enel, which recently released a five-year cost-business plan, is looking to capitalize on France opening up its generation and distribution markets. Enel's entrance into the

French market could also allow it to indirectly take an interest in the Belgian, German and Netherlands markets. The company said that European expansion is important given its declining share of the Italian market.

Ontario has no intention of building new nuclear plants – Although the province of Ontario is facing increased electricity demand, a recent statement by the province's energy minister, John Baird, reveals that the Ontario government has no intention of building new nuclear power plants. "The province has no intention...of building new nuclear assets," said Baird. However, Baird said the province is not turning its back on nuclear power and would welcome new nuclear plants if Ottawa or the private sector were willing to fund their construction. "If the federal Crown corporation (Atomic Energy of Canada Ltd.) wanted to build one, that would be their call," said Baird.

Earlier in the week, Ontario's energy-supply regulator warned that the province would have to replace 40 percent of its generating capacity within 15 years. According to Baird, this suggests that there is a need for a diverse supply of energy over the long-term. Currently, Ontario is facing tight electricity supplies that could be alleviated with the return of units at both the Bruce and Pickering nuclear plants. Baird noted that the need for new nuclear plants would depend on the success of getting existing nuclear plants back online. "It depends on whether the existing nuclear facilities get back the five years that they've been turned off," said Baird. In the

Comparison of 1st Quarter Volumes, 1988-2003



Spot Market Statistics																
(million lbs U ₃ O ₈ equivalent)																
	2000					2001					2002				2003	
	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q
Total Volume	4.2	3.0	1.9	6.3	15.4	4.1	4.5	4.4	6.4	19.4	7.8	4.0	2.3	5.4	19.4	3.9
# Transactions	11	12	7	16	46	11	14	15	22	62	29	11	7	20	67	9
Avg. Leadtime (mths)	7.2	5.6	5.4	5.5	5.9	6.7	6.4	6.4	6.3	6.4	5.9	4.4	4.6	6.6	5.7	4.3
Form																
U ₃ O ₈ Total	1.6	1.6	1.4	4.3	8.9	1.9	2.9	3.7	4.8	13.3	4.8	2.2	0.6	2.4	10.0	2.4
UF ₆ Total	1.7	1.0	0.5	1.8	5.1	1.8	0.3	0.6	1.5	4.1	2.2	1.8	1.7	3.0	8.6	1.6
EUP Total	0.9	0.3	0	0.2	1.5	0.4	1.3	0.1	0.1	2.0	0.8	0.0	0	0	0.9	0
Need																
Actual	2.1	2.7	1.8	4.8	11.4	2.5	4.2	3.2	5.3	15.2	5.7	0.8	1.7	2.2	10.3	3.4
Discretionary	2.1	0.3	0.1	1.5	4.0	1.6	0.3	1.2	1.1	4.2	2.1	3.2	0.6	3.3	9.2	0.5
Method																
On-market	3.9	2.4	1.2	3.5	11.0	1.2	3.1	2.2	2.3	8.8	3.2	3.7	2.3	3.3	12.5	3.9
Off-market	0.3	0.6	0.7	2.8	4.5	2.9	1.4	2.2	4.1	10.6	4.5	0.3	0	2.1	6.9	0
Buyers																
U.S.	2.7	2.4	1.2	3.6	10.0	1.4	2.5	1.4	3.2	8.4	2.1	1.5	0.5	2.1	6.2	2.2
Non-U.S.	1.5	0.5	0.7	2.7	5.5	2.7	2.0	3.1	3.3	11.0	5.7	2.5	1.8	3.3	13.3	1.7
Sellers																
U.S.	2.5	0.9	1.1	1.8	6.3	0.2	0.1	0.4	0.2	1.0	1.3	0.4	0.3	1.8	3.8	0
Non-U.S.	1.7	2.1	0.8	4.5	9.2	3.9	4.4	4.0	6.2	18.5	6.5	3.6	2.0	3.6	15.6	3.9

NEWS BRIEFS cont...

near-term, Baird said Ontario's government will rely on smaller-scale generation projects such as new hydro-electric facilities. Meanwhile, a spokesman for AECL said there has been some interest in the construction of an advanced Candu reactor in Ontario, but building one of the reactors would cost at least C\$750 million and take a minimum of three years to construct.

TVEL to supply India's Kudankulam nuclear power plant – India has signed a US\$400 million deal with Russia's TVEL for the supply of nuclear fuel for its Kudankulam nuclear power plant under construction in Tamil Nadu. The fuel deal for the supply of the first batch of nuclear fuel rods was signed in Moscow last Wednesday by the chairman of Nuclear Power Corporation of India (NPCIL) V.K. Chaturvedi and president of TVEL Alexander Nyago. The first batch of fabricated fuel deliveries is scheduled for the 2006 through 2010 period.

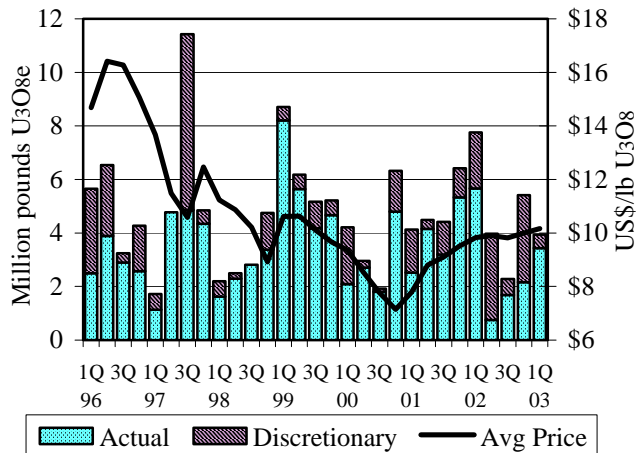
According to TVEL spokesman Vladislav Bochkov, Russia is to supply fuel for the entire life of the nuclear plant under the intergovernmental agreements of 1988 and 1998 on the construction of the two VVER-1000 reactors at the plant. "IAEA specialists will control the deliveries, storage and loading of nuclear fuel," according to Nyago. The Kudankulam power plant is expected to be commissioned in 2007-2008, with the supply of nuclear fuel commencing in 2006.

Energy legislation advances in the House – The House Energy and Commerce Committee completed its markup of comprehensive energy legislation on April 2. Included are provisions affecting future sales of U.S. Government-owned uranium. These provisions include quantity limitations on the sale of both the Department of Energy's (DOE) uranium inventory and the so-called alternate feed from contaminated materials managed by the Army Corps of Engineers under the FUSRAP program.

The limitations are as follows: 3 million pounds U₃O₈ equivalent through 2009, 5 million pounds U₃O₈ equivalent in 2010 and 2011, 7 million pounds U₃O₈ equivalent in 2012 and 10 million pounds U₃O₈ equivalent in 2013 and each year thereafter. There is a preference for sales of uranium derived from the alternate feed. The transfers or sales must be pursuant to contracts of three or more years in duration and must be sold for fair market value. In addition, the latest version of the bill eliminates the Secretarial Determination regarding adverse material impact that is now required by the USEC Privatization Act.

The bill authorizes the transfer of up to 9,550 metric

Quarterly Spot Volume vs. Ux Average Price



tons of uranium to USEC to replace uranium previously transferred that does not meet commercial specifications. It also authorizes the DOE to sell enrichment ser-

Ux Price Definitions

The Ux Prices indicate, subject to the terms listed, the most competitive spot offers available for the respective product or service, of which The Ux Consulting Company, LLC (UxC) is aware. The **Ux U₃O₈ Price** includes conditions for delivery timeframe, quantity, and origin considerations, and is published weekly. The **Ux RU U₃O₈ Discount** reflects the difference between the Ux U₃O₈ Price and the most competitive price for deliveries up to six months forward without regard to specific quantity or origin. The **Ux Conversion Prices** consider spot offers for delivery up to twelve months forward with delivery in North America (NA) or Europe (EU). The **Ux UF₆ Values** represent the sum of the conversion and U₃O₈ components as discussed above and, therefore, do not necessarily represent the most competitive UF₆ offers available. The **Ux SWU Price** considers spot offers for deliveries up to twelve months forward for other than Russian-origin SWU while the **Ux RU SWU Price** pertains to the delivery of Russian-origin SWU. The RU U₃O₈ Discount, Conversion, UF₆ and SWU prices are published the last Monday of each month. The Ux Prices represent neither an offer to sell nor a bid to buy the products or services listed.

The NuclearFuel and RWE NUKEM prices belong to their respective companies and are published with permission. Definitions of these prices are available from their original source.

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The Ux Consulting Company, LLC
10927 Crabapple Road, Suite 201
Roswell, GA 30075-5825, USA
Phone: (770) 642-7745
Fax: (770) 643-2954
Internet: <http://www.uxc.com>

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NEWS BRIEFS cont...

vices in the event USEC defaults on its obligations under the Memorandum of Agreement signed between DOE and USEC in June 2002.

The Senate Committee on Energy and Natural Resources is expected to begin marking up its comprehensive energy legislation on April 8, with consideration of nuclear matters, including uranium sales restrictions, tentatively scheduled for April 10.

House of Commons criticizes UK gov't's energy white paper – A report from the House of Commons all-party science and technology committee, which has been looking into UK government efforts to move away from the use of fossil fuels toward renewables, has criticized the recently released energy white paper for essentially stating that renewables can fill the void resulting from the closure of nuclear plants. In a quote to the *Guardian Unlimited*, the committee said, “there is no prospect” of achieving the target of 10% renewable power generation by 2010 and 20% by 2020. The committee said that it is confident that nuclear power can play an important role, but said that Britain’s lead in this technology is endangered unless investment is maintained. Referring to the energy white paper, the committee ministers said, “It had ducked a central issue – whether to provide a future for nuclear power industry – and failed to give a lead.”

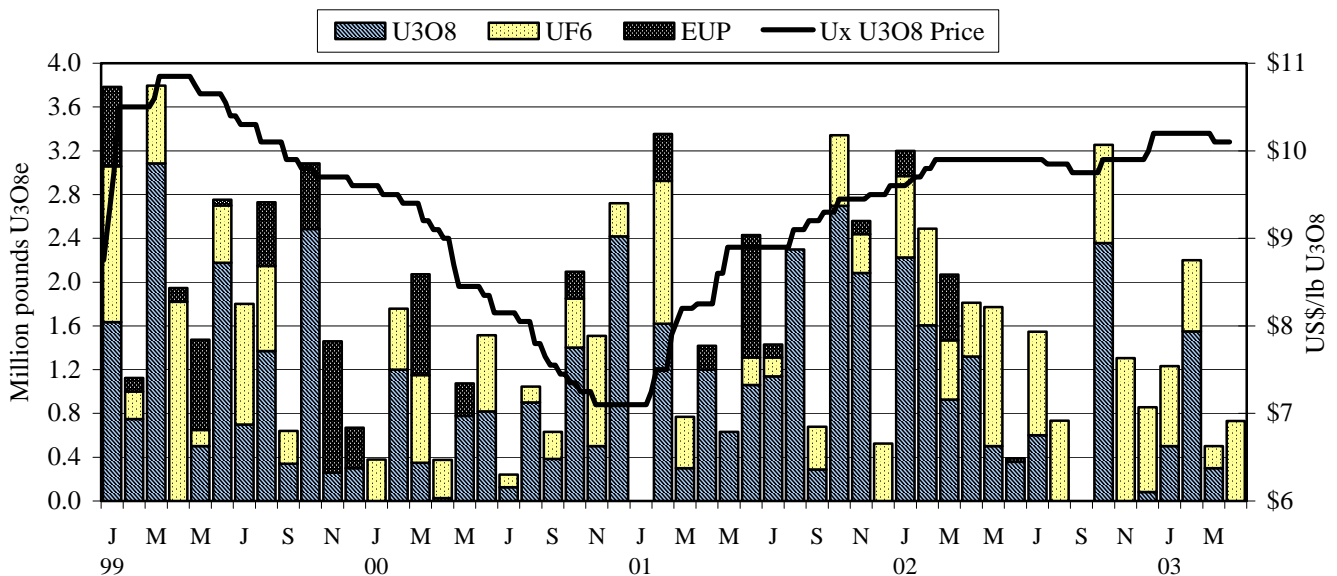
Nils Diaz selected as new chairman for NRC – President Bush has appointed Dr. Nils J. Diaz as chairman of the U.S. Nuclear Regulatory Commission. The NRC’s previous chairman, Democrat Dr. Richard Meserve, resigned on March 31. Diaz, who is a Republican, has served on the NRC’s board of commissioners since 1996. His current term as a commissioner began in 2001 and expires on June 30, 2006. Because Diaz

was already a commissioner for the NRC, there was no need for Congress to confirm his promotion to chairman. However, Congress must approve the President’s appointment of a new commissioner to the NRC, and no more than three of the five commissioners can be from the same political party. Diaz earned a Ph.D. in nuclear engineering sciences at the University of Florida. In a Nuclear Energy Institute press release, chief nuclear officer Marvin S. Fertel stated, “The industry looks forward to working with Chairman Diaz and the NRC commissioners continue to implement a forward looking regulatory system...”

Private Fuel Storage to appeal NRC’s denial of license for spent fuel facility – Private Fuel Storage has decided to file two separate appeals in response to a March 10 ruling by the NRC’s Atomic Safety and Licensing Board that withheld a license for the PFS spent fuel storage facility based on the risk of impact from an Air Force aircraft. PFS will appeal the ruling directly to the board of five commissioners who govern the NRC.

In addition, PFS has also decided to submit an alternate proposal for its facility to the Atomic Safety and Licensing Board that calls for provisionally scaling back the site to about one-tenth of its original size. PFS is hoping that the licensing board would agree to grant a provisional license to store 336 casks at the Skull Valley, Utah facility because the smaller facility would be less of a risk than its original planned size of 4,000 casks. “If we received a conditional license to operate a smaller site, we would be able to proceed with planning and construction while continuing to address [the licensing board’s] concerns and make our case for a larger facility,” said PFS chairman John Parker.

Monthly Spot Volume by Form vs. Ux U₃O₈ Price



THE MARKET

March Market Review – As discussed on page 1, uranium spot activity this quarter has been low. This decline also applies to all forms this past month as only two spot deals and no term transactions were reported.

Uranium – New demand entered the spot market last week as a non-U.S. utility submitted an RFQ for almost 210,000 pounds U₃O₈ equivalent as UF₆ with North American delivery in July 2003. Offers are due April 30th. This utility also made its selection for about 730,000 pounds U₃O₈e as UF₆ with European delivery split between April and June 2003. A U.S. utility that was out for 131,000 pounds U₃O₈ equivalent with delivery in or after June 2003 made its decision late last week. A non-U.S. producer is evaluating offers for 500,000 pounds U₃O₈ with delivery in October 2003. While market activity is trickling by, the Ux U₃O₈ Price remains flat for the week at \$10.10 per pound.

A U.S. utility has offers due April 17th for over two million pounds U₃O₈e in any form with either spot or mid-term delivery in 2004-2005. Another U.S. utility is evaluating term offers that could include 4.9 million pounds U₃O₈e as an EUP option with delivery in 2006-2011. A non-U.S. utility is evaluating offers for 1.8 million pounds U₃O₈e with delivery in 2004-2006.

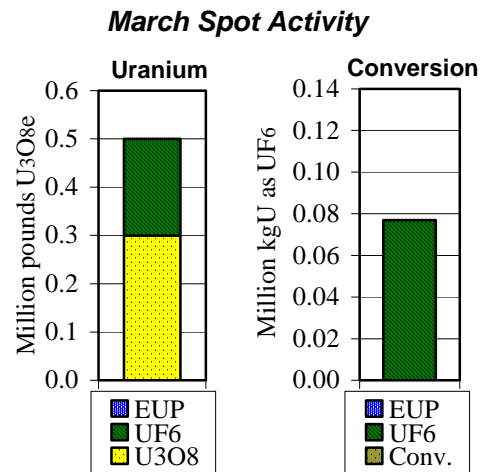
Conversion – A non-U.S. utility submitted an RFQ for 80,000 kgU as UF₆ with delivery in July 2003. Offers are due April 30th. This utility is also evaluating

offers for 180,000 kgU as UF₆ with delivery in April and June 2003. A U.S. utility received offers last week for 153,000 kgU of conversion services with delivery in the latter half of this year, and an optional 48,000 kgU of conversion with delivery near the beginning of next year. In the term market, a non-U.S. utility is evaluating offers for over 11 million kgU of conversion services including options with delivery in 2003-2010. Another non-U.S. utility is out for 704,000 kgU as UF₆ or EUP with delivery in 2004-2006. A U.S. utility has offers due April 17th for 790,000 kgU of conversion services in any form with delivery in 2004-2005. Another U.S. utility is evaluating offers for conversion services or EUP potentially totaling 1.9 million kgU.

Enrichment – While there are no active spot requests, three buyers are active on the term market. A U.S. utility is out for about 400,000 SWU with delivery in 2004-2005. Either SWU or EUP will be considered and offers are due April 17th. A non-U.S. utility is evaluating offers for over 400,000 SWU with delivery in 2004-2006. A U.S. utility is evaluating term offers that could total almost 1.2 million SWU with delivery in 2006-2011.

Ux Spot Prices	
Weekly (4/7/03)	
U ₃ O ₈	\$10.10
Quantities:	1-300,000
Delivery:	6 months
Month-end (3/31/03)	
U ₃ O ₈	\$10.10
RU Disc.	\$0.20
NA Conv.	\$5.00
EU Conv.	\$6.25
NA UF ₆ Val	\$31.39
EU UF ₆ Val	\$32.64
SWU	\$108.00
RU SWU	\$88.00

UxC Market Statistics				
Monthly (Mar)	Spot		Term	
	Volume	# Deals	Volume	# Deals
U ₃ O ₈ e (million lbs)	0.50	2	0	0
Conv. (thousand kgU)	77	1	0	0
SWU (thousand SWU)	0	0	0	0
2003 Y-T-D	Spot		Term	
	Volume	# Deals	Volume	# Deals
U ₃ O ₈ e (million lbs)	4.79	11	4.7	2
Conv. (thousand kgU)	935	6	4,850	3
SWU (thousand SWU)	0	0	0	0
Key: N/A – Not available. W – Withheld due to client confidentiality.				
UxC Leading Spot Price Indicators				
Three-month forward looking spot price indicators, with publication delayed one month. Readings as of March 1, 2003.				
Uranium (Range: -17 to +17)	+2 [unchanged]			
Conversion (Range: -16 to +16)	+4 [down 1 point]			
Enrichment (Range: -18 to +18)	+3 [unchanged]			
NuclearFuel Price Range - 3/31/03 (US\$/lb)	\$9.85-\$10.25			
RWE NUKEM Spot Uranium (US\$/lb U ₃ O ₈)	\$10.00-\$10.20			
Price Ranges Spot Conversion (US\$/kgU)	\$5.10-\$6.20			
As of 3/31/03 Spot SWU (US\$/SWU)	\$86.00-\$107.00			



Emergency Landing

According to *The Australian*, an airliner recently encountered severe vibration in flight. The captain decided to make an emergency landing, and switched on the seat belt sign.

The vibration stopped immediately.

A passenger emerged from a lavatory and explained that he had been joggling in place inside.