

W E E K L Y

No Suspense, or Is There?

For a decade, the nuclear fuel industry has been anxiously waiting for the expiration of the Suspension Agreement on Russian Uranium and the resumption of uranium trade with Russia. What gave us that idea? Perhaps it was the sentence in the March 1994 amendment to the Suspension Agreement that reads: “The Agreement is hereby extended until March 31, 2004.” However, as we approach that much anticipated date, we discover a number of factors that may lead us to revisit our expectations.

First, according to the U.S. Department of Commerce (DOC), the Agreement itself does not expire, only the March 1994 matched sales amendment expires. In recent presentations, DOC simply states “there is no affirmative quota” for the importation of Russian uranium into the U.S. At the same time, DOC is making it clear that both imports of Russian LEU derived from HEU and imports of Russian LEU into the U.S. that are further processed and

subsequently re-exported, according to the terms of the Russian Suspension Agreement, will continue uninterrupted. Clearly, DOC has recognized the importance of the HEU deal as both a commercial and a policy matter and the irrelevance of the re-export transactions to DOC’s original goals.

Second, even if the Suspension Agreement on Russian Uranium were to expire this week, and unfettered trade with Russia was allowed to begin, it is important for us to ask whether things would be any different, in terms of impacts on the global markets for nuclear fuel. This is not only because Russia has been declared a “market economy,” but also because the very dynamics of the fuel market itself have changed since the inception of the trade restrictions in 1992.

It is highly ironic that just as the suspension agreement is “expiring,” uranium prices have again attained a level where matched sales would make sense. However, it appears Russia no longer has low-price uranium to match with domestic supplies, nor is there much domestic production to base the matches on. Instead of exporting uranium to the United States, Russia is looking to take uranium back, as witnessed by the Tenex’s termination of its contract with GNSS and Minatom’s decision to keep the optional HEU feed material that could have gone to the Western suppliers.

The current uranium and conversion situation thus underscores how much the world has changed since the suspension agreement was put into place and amended. While Russian feed entering the United States was a big deal back then, now the market is more concerned with whether Metropolis is operating or whether Rio Tinto will shut down the Rössing mine. And, of course, there is concern whether Tenex will “cover” commitments that GNSS had entered into for HEU feed. Perhaps this is the real suspense now, coupled with residual uncertainty about the current HEU deal. Many now believe that there will not be a HEU-II.

While the uranium part of the Suspension Agreement now seems moot, what little suspense that may still be attached to the suspension agreement relates to what might happen on the SWU front. It appears that Russia is much more interested in selling commercial SWU than feed, and in this respect could possibly push for some SWU quota. This is, however, a complicated matter. In the past, the U.S. has opposed commercial Russian SWU imports because they could undermine Russian incentives to sell HEU SWU. However, SWU demand is now growing at the expense of uranium demand as tails assays are being driven down with the rise of uranium prices. In terms of market impact, commercial SWU imports might be used to balance increased demand for SWU to operate at lower tails assay. It is thus perhaps another irony that any future Russian sales of SWU to the U.S. would come at the expense of uranium demand if the Commerce Department does not view this as price suppressive to uranium supply.

Recent experience has shown us that not only has Russia had to adjust to being a market economy but also to the realities of its own uranium supply needs. These realities are apparently what prompted Tenex and Minatom to take the actions they did. That is, concerns about future supply availability, and not a desire to maximize their commercial positions, were what motivated them to take these actions. Going forward, it seems that Russia is much more interested in selling higher-value products and services—not just SWU, but fabricated fuel, the take-back of spent fuel, and, of course, supplying reactors (along with fuel). However, while we can speculate, it is much more useful to hear the Russian position directly from the Russians themselves.

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NEWS BRIEFS

ERA's Ranger shut down following water incident

– On March 24, Energy Resources of Australia (ERA) shut down mining operations at Ranger following a water supply incident on the evening of March 23rd. The scare came after three workers coming off the night shift complained that water in the showers was making them itchy. It was reported in *The Australian* that the water was found to contain levels of uranium up to 400 times safe drinking levels. ERA said none of the workers had to be treated medically. Immediately after the incident, ERA closed the mine and sent 170 non-essential staff home as a precaution, and shut down the drinking and washing water system. The total number of employees who reported they had mild symptoms as of March 24 stood at six.

Evidence gathered by ERA suggests that an erroneous connection between the potable and process water systems in the processing plant may have occurred prior to Tuesday night. In the process of investigation, ERA also noted that there was an overflow of water on the night of March 23rd from a holding tank about a kilometer from the airport on the Ranger mine lease. This water is believed to have contained elevated uranium levels of four times the safe drinking water guideline.

ERA is working with Commonwealth and Territory regulators to plan the re-start of operations at its Ranger mine. As of March 25, the company was hoping operations could resume as soon as the weekend of March 27/28.

New Mexico Environment Department seeks involvement in LES license review process

– On March 23, the New Mexico Environment Department (NMED) filed a petition with the NRC for intervention in the license application process for LES' proposed National Enrichment Facility to be built in Eunice, New Mexico. The NMED also requested a public hearing on the license application. This comes just before the April 6 deadline for filing a hearing request or petition for intervention with the NRC. If the petition is granted, it would give the state of New Mexico legal positioning in hearings, allowing state representatives to raise concerns, ask questions and cross-examine witnesses. Issues that the NMED wants to discuss during the hearing include waste and storage disposal, waste classification, financial assurance for waste disposal and decommissioning, and additional information on health and safety requirements. LES President Jim Ferland issued a statement saying that he welcomes the state's participation, and that "LES remains committed to working with the people of New Mexico and State govern-

— Industry Calendar —

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

- **Mar 30-Apr 2 – World Nuclear Fuel Cycle 2004**
Nuclear Energy Institute <http://member.nei.org/>
World Nuclear Association <http://www.world-nuclear.org/>
Crowne Plaza Madrid City Centre, Madrid, Spain
- **May 9-11 – WNFm 31st Annual Meeting**
World Nuclear Fuel Market <http://www.wnfm.com/>
Westin Bayshore Resort & Marina, Vancouver, Canada
- **May 24 – UNFEG Meeting**
Utility Nuclear Fuel Economics Group
Omni Richmond Hotel, Richmond, Virginia
- **Jun 8-10 – Nuclear Fuel Procurement Seminar**
The Ux Consulting Company, LLC <http://www.uxc.com/>
Sheraton Hotel, Atlanta, Georgia
- **Jun 13-17 – ANS Annual Meeting**
American Nuclear Society <http://www.ans.org/>
Omni William Penn Hotel, Pittsburgh, Pennsylvania
- **Jul 21 – NEI Nuclear Fuel Supply Forum**
Nuclear Energy Institute <http://member.nei.org/>
Willard Inter-Continental Hotel, Washington, DC
- **Sep 8-10 – WNA 29th Annual Symposium**
World Nuclear Association <http://www.world-nuclear.org/>
Queen Elizabeth II Conference Centre, London, UK
- **Oct 10-13 – NEI Uranium Fuel Seminar**
Nuclear Energy Institute <http://member.nei.org/>
Ponte Vedra Inn & Club, Ponte Vedra Beach, Florida

ment to assure full resolution of any and all concerns associated with the NEF.”

Eurodif, Urenco request antidumping and countervailing duty administrative reviews

– In the March 26, 2004 *Federal Register*, the U.S. Department of Commerce (DOC) reports that it has received a request by Eurodif to conduct administrative reviews of antidumping and countervailing duty orders on low enriched uranium (LEU) from France over the period of 2/01/03-1/31/04. Similarly, Urenco has requested that the DOC conduct an administrative review of countervailing duty orders on LEU from Germany, the Netherlands, and the United Kingdom over the period of 1/01/03 -12/31/03. The DOC intends to issue the final results of these reviews not later than February 28, 2005.

Honeywell restarts Metropolis plant – Con-
verDyn announced March 28 that Honeywell's Metropolis conversion facility started up the ore preparation process, which is the first stage of the process to convert U₃O₈ to UF₆. Since a public meeting with the U.S. Nuclear Regulatory Commission (NRC) on March 18, representatives from Honeywell and the Metropolis plant

NEWS BRIEFS cont...

have conducted a detailed Readiness Assessment that led to the NRC's decision to approve a phased start-up of UF₆ operations. The phased restart will continue over the next two weeks, with a goal of filling UF₆ cylinders during the week of April 5. During this time, NRC inspectors will continue to monitor the start-up process to ensure a safe and smooth resumption of UF₆ operations.

In its press release, ConverDyn said it intends to have new delivery schedules available for its customers and to enrichment delivery locations by the end of April 2004. The company reiterated that delivery delays are likely to continue for some period of time until the inventories exhausted by the extended shutdown are re-built. It could take up to two years to replenish the inventory pipeline depending on how quickly UF₆ production is ramped up, as well as other factors such as the return of loaned UF₆ and delivery deferrals.

Rosenergoatom plans to invest US\$800 million in nuclear plant development in 2004 – In an interview with *Interfax*, Rosenergoatom's international director Anatoly Kirichenko said the utility plans to invest US\$800 million in developing and building nuclear plants in Russia in 2004. Kirichenko said that Rosenergoatom annually invests up to US\$1 billion on nuclear plant development. He said the utility uses "exclusively" state funds on these projects, but is also interested in other vehicles of financing. "We do not yet have the civilized mechanism in place in developed countries whereby nuclear power plants are built using credits, borrowed funds and investment from private companies," he said.

Looking forward, Kirichenko said Rosenergoatom plans to start-up Kalinin 3 in August/September 2004 and will continue work on constructing units at the Kursk and Volgodonsk nuclear plants. Over the next 15 years, Rosenergoatom plans to start-up 10 new reactors. Currently, the utility's 10 nuclear plants contain 30 power-producing nuclear reactors with a total generation capacity of 22.2 million kilowatts, or 11% of Russia's production capacity. In 2003, Russian nuclear plants accounted for 16.5% of the country's electricity production.

Russian official believes his country will likely build two more reactors in China – Vladimir Asmolov, who is a leading official for Russia's federal agency for nuclear power, has stated that Russia will most likely complete the next phase in the construction of the Tianwan nuclear power plant in China. Russia is currently in the process of completing Units 1 and 2 at the plant, which are due to begin commercial operation in August 2004 and December 2005, respectively.

Two additional units are planned for Tianwan, and pits have been dug for those units that would fit Russian reactors. "In all, China is trying to construct nuclear units on different grounds. On one of the grounds, all the units are Russian, one the second – Chinese, on the third – French and on the fourth – Canadian," Asmolov told Russian Information Agency *Novoski*.

Ukraine says it can complete Khmelnytsky 2 and Rovno 4 without EBRD assistance – According to *Interfax-Ukraine*, Ukraine President Leonid Kuchma said Friday that his country can complete the construction of Khmelnytsky 2 and Rovno 4 without assistance from the European Bank for Reconstruction and Development (EBRD). "They're promising to give us the money in summer or autumn...[but] we'll manage without them, I've no doubt," Kuchma said at a meeting on the construction project. Ukraine hopes to complete construction of the two reactors by autumn of this year.

International Power will not submit bid for Slovenske Elektrarne – UK firm International Power has decided that it will not participate in due diligence later this month for a 66 percent stake in Slovenske Elektrarne (SE), Slovakia's national electric utility. The company is troubled by a lack of clarity regarding the future direction for regulation of Slovakia's energy industry. It is also likely that concern over the costs of SE's nuclear liabilities contributed to International Power's decision. Although the company says it will not participate in the first round of bidding, it says it is possible that it could re-enter the bidding during a later round if its concerns are addressed. Four other firms are interested in purchasing SE, and at least three of those firms are thought to be willing to take on the utility's nuclear assets along with non-nuclear assets. The Czech Republic's CEZ and Russia's Unified Energy Systems are seen as having the best chances for purchasing SE.

South Korea to stay with plan to build ten new reactors by 2015 – In spite of increasing public opposition, South Korea is likely to stick to its goals for construction of nuclear reactors, according to a March 26 article in *Reuters*. By 2015, the nation intends to construct ten new reactors, which would bring the total number of reactors in South Korea to 28. South Korea lacks adequate natural resources, and if it were to rely on natural gas instead of nuclear, costs could double. "At the moment, there are no other energy sources which can generate as much power as nuclear energy at cheap costs," said Seok Cho, the director general for the energy ministry's nuclear power industry division.

Currently, 40 percent of South Korea's electricity is supplied by nuclear power. By 2015, the nation is likely

NEWS BRIEFS cont...

to reduce the amount of electricity it gets from oil-fired plants by about 50 percent for environmental reasons. It also plans to boost renewable energy sources from two percent of total electric capacity today to five percent in 2011, but South Korean economist Song Kwang-eui does not believe it would be feasible to use renewable energy to replace nuclear power. "Even if we were to blanket the whole country with windmills, that cannot replace nuclear power plants," he said.

Davis-Besse failed to go back online last week – According to a March 24 article in the *Toledo Blade*, Davis-Besse did not return to service last week and is not expected to go back online until at least sometime this week. The most recent problem is that a feed-water isolation valve is not working and although the NRC says the plant could still operate safely, it would be uneconomical to do so since it would only be able to operate at about 25 percent of capacity until the problem is fixed. The plant went offline on March 17, just one day after it had recommenced generating electricity following a prolonged outage of more than two years.

New reactor achieves criticality at Japan's Hamaoka nuclear power plant – A new reactor has achieved criticality in Japan at the Hamaoka nuclear power plant, but it will not begin full-scale commercial operation until January 2005. Unit 5 at the Hamaoka nuclear plant is a 1,325 megawatt boiling water reactor located in Shizuoka Prefecture. The Hamaoka nuclear power plant is owned and operated by Chubu Electric Power Company.

Chubu Electric Nuclear Power Units			
Unit	Size	Type	Startup
Hamaoka-1	515 MWe	BWR	Mar. 1976
Hamaoka-2	806 MWe	BWR	Nov. 1978
Hamaoka-3	1,056 MWe	BWR	Aug. 1987
Hamaoka-4	1,092 MWe	BWR	Sep. 1993
Hamaoka-5	1,325 MWe	BWR	Mar. 2004*
Total:	4,794 MWe		

* Initial criticality, commercial startup expected in January 2005. Once this unit is operational, Japan will have 54 operating reactors totaling over 45.4 GWe of nuclear generating capacity.

Yucca Mountain needs support of Congress to open on schedule – Opening of the Yucca Mountain spent fuel repository is likely to be delayed if the U.S. Department of Energy does not receive all of the funding that it has requested for the next fiscal year, according to Margaret Chu, who heads the repository project as the director of the DOE's Office of Civilian Radioactive Waste Management. The DOE has asked for \$890 million for FY2005, including \$559 million that would go towards design, license preparation, and other

activities directly related to the repository, and another \$331 million for developing a spent fuel transportation plan and related activities. "Meeting the 2010 objective will require much greater resources than the program has thus far received," said Chu in a quote to the *Associated Press*.

The chairman of the House Appropriations subcommittee on energy and water, David Hobson (R-Ohio) stated that he believes the House will vote in favor of all the requested funding. However, the battle to get the Senate to approve all the funding is likely to prove more difficult as was the case last year. In 2003, the House approved \$765 million in funding for Yucca Mountain, \$174 million more than the \$591 million requested by the DOE. But the Senate initially approved only \$425 million for the project. Congress finally settled on an Energy and Water Act that provided the repository with \$580 million in funding for FY2004. The DOE is hoping to open Yucca Mountain in 2010.

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 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 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 Euro price equivalents are based on exchange rate estimates at the time of publication and are for comparison purposes only.

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THE MARKET

Uranium – Since the end of December, the month-end spot price has risen exactly one dollar each month, and this month is no exception. As shown in the chart below, this rate of ascent has actually continued since early September. In fact, the uranium spot price has not stayed at the same price for longer than a three-week span since it jumped from \$11.30 to \$12.00 last September. As we hit the last Monday in March, the Ux U₃O₈ Price holds unchanged for the week at \$17.50 per pound, up again \$1 for the month, as the tight supply situation has continued to exert upward pressure on price. Currently on the spot market, a non-U.S. producer that was out for 500,000 pounds with delivery anytime this year made its selections, taking just under its requested quantity. Another non-U.S. buyer is now evaluating offers received last week for about 400,000 pounds U₃O₈ with spot delivery between October 2004 and June 2005. No new formal demand is reported.

Conversion – A non-U.S. utility is awaiting spot offers due April 7th for between 80,000 and 230,000 kgU of conversion services with delivery at USEC by July 1, 2004. This utility is also evaluating offers for 60,000 kgU of conversion services at Urenco and between 60,000 and 170,000 kgU at Eurodif, both with delivery next month. While it may be too early to see the effects of the potential restart of Metropolis this month, the Ux NA Conversion Price is unchanged for the month at \$7.00 per kgU. Upward pressure still remains in the

market and supplies are very tight; however, current activity reflects that spot offers for North American delivery have held firm for the month. Upward pressures in the European market – including those from exchange rates and limited spot supplies – also continue, resulting in increased offer prices for this delivery market during the month, as reflected in the Ux EU Conversion Price which rises \$0.50 to \$8.50 per kgU.

Enrichment – The spot market has been fairly limited over the past year with few to no reported transactions each quarter. Based on last year's revised tallies, we posted a total of nine transactions for just under half a million SWU, all of which were off-market. Small amounts of activity continue this year with some discussions actually resulting in spot volume, again all off-market. Even with this light amount of activity and limited spot supply, spot offers have remained level and firm, resulting once again in the Ux SWU Price unchanged for the month at \$108 per SWU. The Ux RU SWU Price is also unchanged at \$89 per SWU.

Ux Spot Prices (€Equivalent)		
Weekly (3/29/04)		In Euros
U ₃ O ₈	\$17.50	€14.45
Quantities:	1-300,000	1 US\$ =
Delivery:	6 months	.82562€
Month-end (3/29/04)		.82562€
U ₃ O ₈	\$17.50	€14.45
NA Conv.	\$7.00	€5.78
EU Conv.	\$8.50	€7.02
NA UF ₆ Val	\$52.72	€43.53
EU UF ₆ Val	\$54.22	€44.77
SWU	\$108.00	€89.17
RU SWU	\$89.00	€73.48

UxC Market Statistics				
Monthly (Mar)	Spot		Term	
	Volume	# Deals	Volume	# Deals
U ₃ O ₈ e (million lbs)	0.9	5	0	0
Conv. (thousand kgU)	10	1	0	0
SWU (thousand SWU)	W	W	0	0
2004 Y-T-D	Spot		Term	
	Volume	# Deals	Volume	# Deals
U ₃ O ₈ e (million lbs)	3.1	13	14.8	9
Conv. (thousand kgU)	423	5	1,939	3
SWU (thousand SWU)	W	W	402	1

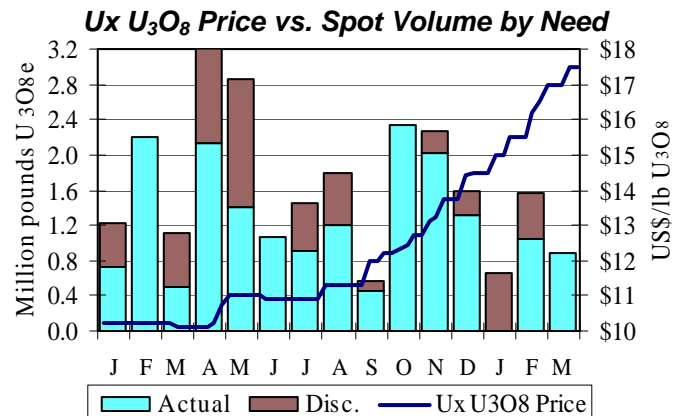
Key: N/A – Not available. W – Withheld due to client confidentiality.

UxC Leading Spot Price Indicators

Three-month forward looking spot price indicators, with publication delayed one month. Readings as of February 1, 2004.

Uranium (Range: -17 to +17)	+11 [unchanged]
Conversion (Range: -16 to +16)	+12 [unchanged]
Enrichment (Range: -18 to +18)	+3 [unchanged]

NuclearFuel Price Range - 3/29/04 (US\$/lb)	\$17.40-\$18.10
RWE NUKEM Spot Uranium (US\$/lb U ₃ O ₈)	\$15.50-\$16.50
Price Ranges Spot Conversion (US\$/kgU)	\$6.50-\$7.00
As of 2/29/04 Spot SWU (US\$/SWU)	\$89.00-\$108.00



Even Wonder...

- Why the sun lightens our hair, but darkens our skin?
- Why is the man who invests all your money called a broker?
- Why women can't put on mascara with their mouth closed?
- Why is lemon juice made with artificial flavor, and dishwashing liquid made with real lemons?
- Why is the time of day with the slowest traffic called rush hour?
- Why is it that doctors call what they do "practice"?
- Why don't sheep shrink when it rains?
- Why isn't there mouse-flavored cat food?
- Why are they called apartments when they are all stuck together?
- If con is the opposite of pro, is Congress the opposite of progress?
- If flying is so safe, why do they call the airport the terminal?