

One of the major developments in the uranium market so far this year has been the rapid ascension of prices for Russian uranium, to the point where this price stands close to that at which other material is sold. This has been brought about by the situation where the potential supply to the so-called “unrestricted” market shrank due to the removal of restrictions on all CIS-origin uranium but Russian, coupled with a continued decline in the amount of Russian  $U_3O_8$  available for sale.

This is certainly not a surprising development to us. We talked about the impending shrinkage/elimination of the “CIS discount” this summer, as Russian supplies tightened. Indeed, at the beginning of the year in our annual cover story concerning predictions for the upcoming year, we stated “it will make little sense to talk about ‘restricted’ and ‘unrestricted’ prices anymore, with the demise of restrictions on CIS uranium.”

The fact that Russian uranium is now in shorter supply following the “absorption” of other CIS uranium into the mainstream market has broader implications for the market, and these will be discussed in future issues of the Weekly. However, this change also requires more immediate consideration with respect to the reporting of prices, a subject that we will address here.

**Changes we are making** – Starting with this issue, we are dropping the publication of the Ux CIS  $U_3O_8$  Price. We will continue to publish the Ux  $U_3O_8$  Price, with its definition unchanged, and this means excluding consideration of offers of Russian-origin uranium in the determination of that price. (In using the term “Russian-origin uranium” we are talking about Russian uranium outside of the HEU feed quota material permitted for sale in the U.S.)

Associated with this change, we will begin to publish a discount for Russian uranium on a monthly basis. This discount is the amount that is to be applied to the Ux  $U_3O_8$  Price to derive a price for Russian-origin uranium. This discount will be abbreviated RU  $U_3O_8$  Discount and relates to our estimate of the most competitive offers where Russian uranium could be delivered over a six month forward time frame. In this way, it is similar to our past definition for the Ux CIS  $U_3O_8$  Price.

Since we are no longer publishing a separate CIS  $U_3O_8$  price, we will no longer publish a CIS  $UF_6$  value, although that could easily be derived for Russian uranium by incorporating the Russian  $U_3O_8$  discount. We will now publish separate North American and European  $UF_6$  values (abbreviated NA  $UF_6$  Val and EU  $UF_6$  Val, respectively), where the values are calculated based on the sum of the Ux  $U_3O_8$  Price and appropriate conversion price components. Finally, we are changing the designation of our Ux CIS SWU Price to the Ux RU SWU Price to better reflect the origin of this SWU source. These price-reporting changes, along with the appropriate changes in our price definition box, will appear at the end of the month when they are implemented.

**Our rationale** – While Russian-origin  $U_3O_8$  may currently be in short supply, it is also the case that there is some sort of restriction on the import of Russian uranium in most major markets in the world. Because of these restrictions, Russian-origin uranium is simply not as fungible as other origins of uranium, and for this reason has a somewhat lower value. Companies that seek to sell Russian-origin uranium realize this, and so do potential purchasers.

We have witnessed the behavior where buyers whose needs can be met without restriction have received and continue to receive lower price offers than those buyers whose choice is restricted. In other words, there is increased price competition for such buyers’ business. Sellers know of such increased competition, and respond accordingly with more aggressive offers, in effect discounting the price made available to more restricted buyers. It is this discount that we seek to capture.

It should also be pointed out that even if Russian uranium is in short supply now, this doesn’t guarantee that it will be in short supply in the future, a consideration that can affect not only offers for Russian uranium to be made in the future but even current offers for open-origin uranium where future delivery of Russian uranium is permitted.

We have opted to publish a discount rather than a separate price on a monthly instead of a weekly basis because of the more sporadic nature of spot transactions involving Russian-origin uranium. In the past, the CIS (Russian) or “unrestricted” spot price tended to move in a stepwise

**Volume 15  
Issue 40**

Internet:  
[www.uxc.com](http://www.uxc.com)

As published by  
The Ux Consulting  
Company, LLC

**Weekly  
Ux  $U_3O_8$   
Price**

**\$9.30  
(Unch.)**

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# NEWS BRIEFS

**Of Markets and Prices (continued)** – fashion, often staying at the same level for a period of time until the next demand for CIS uranium appeared on the market. Meanwhile, the “restricted” (mainstream) market price may have increased (as it has recently), suggesting the gap between the two was increasing when it really was more of the case that there was a longer period between price “readings” for the CIS price. Having the price differential expressed as a discount means that the price for Russian-origin uranium would move along with changes in the mainstream market prices, a more accurate representation of price behavior.

In addition to supplying price information for Russian uranium at a frequency that is more in line with expected market activity, we are able to maintain the continuity of our mainstream price series (the Ux U<sub>3</sub>O<sub>8</sub> Price). This is an important consideration because, for better or worse, our prices are referenced in a large number of market price contracts. It would seem to be fairly obvious that market price contracts that do not permit the delivery of Russian-origin uranium should not be based on a price that includes consideration of Russian-origin uranium in its determination.

We recognize that at some point it may no longer be necessary or relevant to publish this discount, especially if restrictions are lifted. However, the removal of restrictions on the import of Russian uranium has proven more difficult than for other CIS sources due to the fact that Russia is a major source of enrichment supplies, and actions taken to limit the import of Russian SWU also impact the import of Russian uranium.

**Court rejects second bid by Dutch gov't to close Borssele** – A Dutch Court has blocked a second attempt by the Dutch government to force the early shutdown of EPZ's Borssele nuclear power plant. In its ruling, the court said that the existence of a binding agreement between the Dutch government and EPZ for an early shutdown of the Borssele nuclear plant was “not evident.” The government said it will present additional evidence in court on November 9 to support its claim.

In 1994, the Dutch parliament voted to shut down the 450-megawatt Borssele reactor at the end of 2003. The Dutch Ministry of Economics modified Borssele's operating license to expire on December 31, 2003. However, EPZ employees appealed the decision to shut down the reactor to the Dutch High Administrative Court, saying the plant's operating license was not compatible with Dutch atomic law. The employees won the appeal and the December 2003 license expiration date was revoked.

## — Industry Calendar —

Additional details at: [http://www.uxc.com/top\\_fuelcycle.html](http://www.uxc.com/top_fuelcycle.html)

- **Sep 30-Oct 3** – NEI International Uranium Fuel Seminar will be held in Captiva Island, FL.
- **Oct 1-3** – Infocast's Building New Nuclear Power Plants will be held in Washington, DC.
- **Jan 23, 2002** – NEI Nuclear Fuel Supply Forum will be held in Washington, DC.
- **Apr 14-17, 2002** – NEI Fuel Cycle 2002 will be held in Chicago, IL.

## — USEC Trade Case —

- **Nov 22** – Expected date of U.S. DOC final determinations for antidumping and countervailing.
- **Nov 28** – The U.S. ITC will hold a hearing in connection with the final phase of these investigations.
- **Jan 6, 2002** – Expected date of ITC final injury determination.
- **Jan 13, 2002** – Expected date that DOC would issue a duty order.

In trying to shut down the reactor by other means, the ministry of economics claimed that EPZ had voluntarily agreed to comply with the 2003 shutdown. However, EPZ denied this claim and the government sued EPZ for breaking a binding agreement.

EPZ plans to operate Borssele through its 40-year operating life, which expires in 2013. EPZ will meet with shareholders in 2010 to discuss the possibility of extending Borssele's operating license beyond 40 years.

**German merger collapses** – The German newspaper, *Frankfurter Allgemeine Zeitung*, reported September 27 that the planned merger between Hamburgische Electricitätswerke AG (HEW), Vereinigte Energiewerke AG (Veag), Bewag AG and lignite company Lausitzer Braunkohle AG to form a third German energy giant has fallen apart. The collapse of the merger has been attributed in part to differences between energy companies Vattenfall (Sweden) and Mirant (U.S.), which are both influential shareholders in the planned group. According to the report, the four nuclear power plants operated by HEW posed a major problem for Mirant. Mirant avoids the use of nuclear power and would have been required to set aside substantial financial reserves for the risks involved in entering the nuclear arena.

**Cost of finishing WNP-1 unchanged in second estimate** – On September 26, the second draft of a study on completing Energy Northwest's WNP-1 put

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the cost of bringing the reactor online at \$4.2 billion. The amount is identical to the study's preliminary estimate. A final estimate should be ready in two weeks.

The estimate is believed to be conservative; however, it assumes that a public utility will buy at least 90 percent of the reactor's power. Otherwise, the project would not qualify for tax exempt bonds. Publicly owned Bonneville Power Administration, which buys the energy at a nearby plant, has decided against buying power from WNP-1, and if another public utility cannot be found, interest on the bonds could increase from 6.25% to 7.75%.

At this point, the economic feasibility of the project is uncertain, and the project is less likely to go forward if a public buyer cannot be found. Current estimates predict that the plant will not become profitable until 2013 and will pay for itself by 2030. Energy Northwest may still decide to appoint an independent team to evaluate the study's findings. If the WNP-1 reactor were to be completed, it would generate 1,350 megawatts.

**Rosenergoatom to restructure** – A government order to reorganize Russian nuclear utility Rosenergoatom into a single nuclear business has been signed by Russian Prime Minister Mikhail Kasyanov. The restructuring plan was initially proposed in 1997, but was incorporated into broader reforms of Russia's nuclear industry last year. The Russian Ministry of Atomic Energy (Minatom) said it could be two years, however, before a final agreement is reached on related legal issues that would allow the order to be implemented.

By creating a single generating company, management at Rosenergoatom believe they would be able to "restrain" electricity prices by increasing central financial control over individual plants. The restructured Rosenergoatom would comprise its current nuclear plants—Balakova, Beloyarsk, Bilibino, Kalinin, Kola, Kursk, Novovoronezh, Smolensk and the newly-renamed Volgodonsk plant (formerly Rostov)—as well as Leningrad (which is managed by Minatom). Additionally, plants currently under construction would fall under Rosenergoatom's directorate.

**Four month halt in construction at Taiwanese nuclear plant proves costly** – On September 24, the chairman of Taiwan's Atomic Energy Council, Ouyang Min-sheng, said that a four month halt in construction at the Lungman nuclear plant in Taiwan will delay the opening of the plant's first reactor by 18 months and delay the second reactor by two years. On October 27, 2000, Taiwan's antinuclear government canceled construction on Lungman, but after facing in-

**Ux Month-End Spot U<sub>3</sub>O<sub>8</sub> Prices, Volume, Leadtime and Number of Transactions**

Month	Ux Price		Volume	Average	# of Trans
	U <sub>3</sub> O <sub>8</sub>	CIS	(mill lbs U <sub>3</sub> O <sub>8</sub> e)	Leadtime Months	
Sep '00	\$7.45	\$6.70	0.6	3.5	2
Oct	\$7.25	\$6.70	2.1	6.3	6
Nov	\$7.10	\$6.50	1.5	5.0	3
Dec	\$7.10	\$6.50	2.7	5.0	7
Jan '01	\$7.25	\$6.50	0.0	0.0	0
Feb	\$7.90	\$6.50	3.4	6.6	9
Mar	\$8.20	\$7.00	0.8	7.0	2
Apr	\$8.60	\$7.00	0.8	9.0	4
May	\$8.90	\$7.60	0.4	2.0	2
Jun	\$8.90	\$7.60	1.9	5.0	4
Jul	\$8.90	\$8.00	1.3	4.0	4
Aug	\$9.10	\$8.80	1.2	8.0	5
Sep	\$9.30	\$9.00	0.3	6.0	1

tense pressure from the opposition party in parliament, the government agreed to resume construction on February 14, 2001.

Since February 14, however, negotiations with over 90 contractors have delayed progress. Lungman was 33.81% complete when construction was halted last October, and as of September 24, construction was only 34.62% complete. One of the plant's primary contractors, General Electric Co., refused to resume work until July, when the government agreed to pay it compensation for the 4-month construction halt. The plant's owner, Taiwan Power, estimates that the total cost of compensating contractors will reach NT\$3.4 billion (US\$100 million). In addition, the delay in completion will cost Taiwan Power approximately NT\$10 billion (US\$294 million) in lost revenue.

**Japanese utilities struggle to win public acceptance for new nuclear plants** – Japan will not be able to meet its obligations to the Kyoto protocol to reduce global warming unless it significantly expands nuclear power. According to the findings of a research group at Japan's Natural Resources and Energy Agency, Japan will need 10 to 13 new nuclear power plants to meet these obligations.

Events in recent years, however, have made the public very distrustful of the nuclear industry. Stemming from the Tokai accident in 1999 and the BNFL MOX falsification scandal, intense local opposition has prevented Japanese utilities from carrying out plans to use MOX fuel in several nuclear plants, and public opposition to nuclear power in general has increased.

Deregulation also poses a problem for established utilities, as new utilities entering the market could opt

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for fossil fuels with cheaper start-up costs. If established utilities build more nuclear plants, they could have a difficult time competing with these new utilities.

**Cogema responds to statements on Navoi's Sugrally project** – In response to a report by Kyrgyz news agency *Kabar* on August 10, which was referenced in the August 13, 2001 issue of *The Ux Weekly*, Cogema has made the following comments with regard to statements made by Navoi's managing director concerning Cogema's exit from the Sugrally project.

“Contrary to what is suggested in the article, Cogema did not opt out of the Sugrally project in mid-2001. In fact, Cogema made a positive field investigation of the project back in 1988. Because subsequent discussions with the Combinat (Navoi) did not lead to an agreement, Cogema has had no further involvement with the project since the end of 1999.”

**Westinghouse, Mitsubishi reach agreement in support of AP1000** – Westinghouse Electric and Mitsubishi Heavy Industries, Ltd. (MHI) reached an agreement on September 28 whereby MHI will participate in the engineering and NRC design certification activities of the AP1000, Westinghouse's advanced/passive pressurized water reactor.

Under terms of the agreement, MHI will provide design and engineering resources to support the design completion of the AP1000. And once utilities and power companies begin purchasing the AP1000, MHI will have the opportunity to supply select components for the 1000-megawatt reactor during plant construction. The AP600, a smaller version of the AP1000, received design certification from the NRC in December 1999. Once certified, Westinghouse projects a construction time of about 36 months from first concrete pour to loading fuel into the AP1000 reactor.

**DOE issues notice of intent to prepare an EIS for DUF<sub>6</sub> conversion facilities** – On September 24, the U.S. Department of Energy (DOE) announced its intention to prepare an Environmental Impact Statement (EIS) for a proposal to construct, operate, maintain, and decontaminate and decommission two depleted uranium hexafluoride (DUF<sub>6</sub>) conversion facilities at Portsmouth, Ohio and Paducah, Kentucky. DOE would use the proposed facilities to convert its inventory of DUF<sub>6</sub> to a more stable chemical form suitable for storage, beneficial use, or disposal.

According to DOE, approximately 700,000 metric tons of DUF<sub>6</sub> in about 57,700 cylinders are stored at Portsmouth and Paducah, and at an Oak Ridge, Tennessee site. DOE will hold public scoping meetings near

the three involved sites. Public comments on the proposed scope of the DUF<sub>6</sub> conversion facilities EIS must be postmarked by November 26, 2001.

Four alternatives will be considered in the EIS. The *Preferred Alternative* involves building two conversion facilities, one at the Paducah GDP site and another at the Portsmouth GDP site. This alternative is consistent with the Conversion Plan, which DOE submitted to Congress in July 1999. The *One Conversion Plant Alternative* involves building and operating only one conversion facility at either Portsmouth or Paducah and could differ in size or production capacity from the preferred alternative. Meanwhile, the *Use of Existing UF<sub>6</sub> Conversion Capacity Alternative* would consider using already-existing UF<sub>6</sub> conversion capacity at commercial nuclear fuel fabrication facilities in lieu of constructing one or two new conversion plants. The *No Action Alternative* would continue the “status quo” at the three current storage sites indefinitely.

### 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 U<sub>3</sub>O<sub>8</sub> Price** includes conditions for quantity, delivery time-frame, origin and location considerations while the **Ux CIS U<sub>3</sub>O<sub>8</sub> Price** is the most competitive price for deliveries up to six months forward without regard to specific quantity or location. Both U<sub>3</sub>O<sub>8</sub> prices are published weekly. The **Ux Conversion Prices** consider spot offers for delivery up to twelve months forward. The **Ux UF<sub>6</sub> Values** represent the sum of the conversion and U<sub>3</sub>O<sub>8</sub> components as discussed above and, therefore, does not necessarily represent the most competitive UF<sub>6</sub> offers available. The **Ux SWU Prices** consider spot offers for deliveries up to twelve months forward. The Conversion, UF<sub>6</sub> 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.

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# THE MARKET

**September Market Review** – Demand was light in all three fuel segments last month, although activity picked up somewhat later in the month as several new spot RFQs were reported, and U<sub>3</sub>O<sub>8</sub> and conversion prices inched up. Only two spot transactions, one U<sub>3</sub>O<sub>8</sub> and one conversion, and no term deals were reported. While no term transactions were reported awarded during the month, a total of seven contracts, awarded earlier this year as off-market deals, were added to the database. These totaled ten million pounds U<sub>3</sub>O<sub>8</sub>e, 485,000 kgU of conversion equivalent, and 113,000 SWU. Monthly and year-to-date volumes are listed below.

**Uranium** – New spot demand has appeared as a non-U.S. utility entered the market last week for 736,000 pounds U<sub>3</sub>O<sub>8</sub> with offers due October 23<sup>rd</sup>. Four utilities are either evaluating or awaiting spot offers for over 865,000 pounds U<sub>3</sub>O<sub>8</sub>e. A U.S. utility is expected to make its notifications this week concerning 365,000 pounds U<sub>3</sub>O<sub>8</sub> with delivery in February to May, 2002. Another U.S. utility is evaluating offers for over 57,000 pounds U<sub>3</sub>O<sub>8</sub>e as UF<sub>6</sub> with delivery in December 2001. A non-U.S. utility is evaluating offers due late last week for about 224,000 pounds U<sub>3</sub>O<sub>8</sub>e as UF<sub>6</sub> with delivery in October 2002. Another non-U.S. utility has offers due October 15<sup>th</sup> for 234,000 pounds U<sub>3</sub>O<sub>8</sub> as UF<sub>6</sub> with delivery by the end of October 2001. A U.S. utility that was seeking 365,000 pounds via an online auction last week decided not to accept any bids.

Supplies are reported to be more limited now than they were this time last year. While special deals will still appear, even those sellers that look at moving year-end material appear to be less aggressive than in the past. As a result, the spot U<sub>3</sub>O<sub>8</sub> price continues to show firmness and will likely see upward pressure as new demand appears. After moving up a dime last week, the Ux U<sub>3</sub>O<sub>8</sub> Price remains unchanged at \$9.30 per pound. As stated on page 1, the weekly Ux CIS U<sub>3</sub>O<sub>8</sub> Price will no longer be reported.

**Conversion** – Three utilities are looking for a total of just under 200,000 kgU of spot deliveries, all as UF<sub>6</sub>. A U.S. utility is evaluating offers for 22,000 kgU with delivery in December 2001. A non-U.S. utility is now evaluating offers due late last week for 86,000 kgU with delivery in October 2002. Another non-U.S. utility is awaiting offers due October 15<sup>th</sup> for 90,000 kgU with delivery at the end of October 2001.

**Enrichment** – Two non-U.S. utilities are active, one seeking about 50,000 SWU for spot delivery and the other over 1.3 million SWU as EUP for term delivery.

Ux Spot Prices	
<b>Weekly (10/1/01)</b>	
U <sub>3</sub> O <sub>8</sub>	\$9.30
Quantities:	1-300,000
Delivery:	6 months
<b>Month-end (9/24/01)</b>	
U <sub>3</sub> O <sub>8</sub>	\$9.30
CIS U <sub>3</sub> O <sub>8</sub>	\$9.00
NA Conv.	\$5.25
EU Conv.	\$5.50
UF <sub>6</sub> Value	\$29.55
CIS UF <sub>6</sub>	\$28.76
SWU	\$105.00
CIS SWU	\$86.00

UxC Market Statistics				
Monthly (Sep)	Spot		Term	
	Volume	# Deals	Volume	# Deals
U <sub>3</sub> O <sub>8</sub> e (million lbs)	0.3	1	0	0
Conv. (thousand kgU)	110	1	0	0
SWU (thousand SWU)	0	0	0	0
2001 Y-T-D	Spot		Term	
	Volume	# Deals	Volume	# Deals
U <sub>3</sub> O <sub>8</sub> e (million lbs)	10.1	31	55.91	21
Conv. (thousand kgU)	3,668	21	19,624	14
SWU (thousand SWU)	1,464	18	9,288	13

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 September 1, 2001.

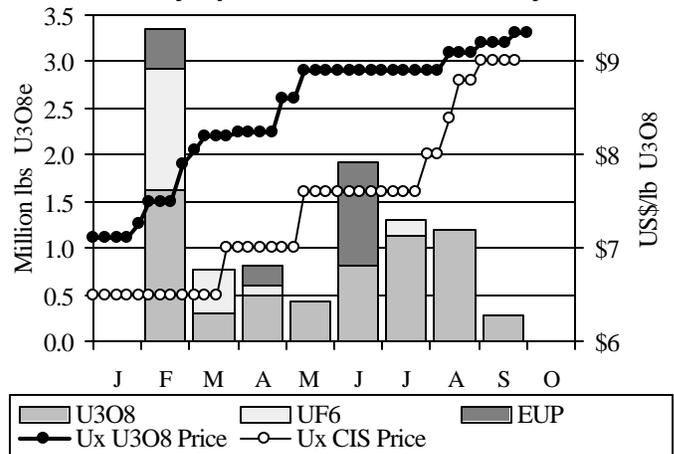
<b>Uranium</b> (Range: -17 to +17)	+7 [up 2 points]
<b>Conversion</b> (Range: -16 to +16)	+5 [unchanged]
<b>Enrichment</b> (Range: -18 to +18)	+2 [down 1 point]

### NuclearFuel Price Ranges

Two-week forward looking prices (US\$/lb) as of Oct. 1, 2001.

U.S. Open Market	\$9.00-\$9.50	Unrestricted	\$8.90-\$9.30
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Ux Weekly Spot Prices vs. Volume by Form



### Real Products - Real Labels

- Marks & Spencer Bread Pudding:** Product will be hot after heating.
- Bar of Dial soap:** Directions: Use like regular soap.
- Hairdryer:** Do not use while sleeping.
- Frozen dinner at home:** Serving suggestion: Defrost.
- Korean kitchen knife:** Warning: keep out of children.
- Hotel-provided shower cap in box:** fits one head.
- Sainsbury's Peanuts:** Warning: contains nuts.
- Swedish chainsaw:** Do not attempt to stop chain with your hands.
- Tesco's Tirimisu Dessert:** Do not turn upside down. (Printed on bottom of box.)