NUKEM

Market Report
Founded 1971.
The people, issues and events that move the nuclear fuel market.

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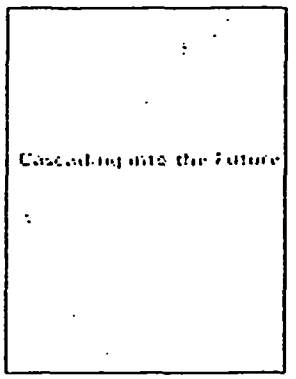
The cover art depicts a URENCO enrichment plan: superimposed on a centrifuge cascade.



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NUKEM
Market Report

The Future of SWU

The decade of the 1990's produced a rough ride for the enrichment services market. The decade opened with the aggressive introduction into the western market of SWU from the Former Soviet Union (FSU). The result was trade restrictions which still apply today in the United States and EURATOM member countries. More cost-efficient gas centrifuge technology continued to acquire market share as older, energy-intensive gaseous diffusion was slowly displaced by the upstart centrifuges.

The U.S. government finally implemented a plan to privatize the domestic enrichment sector, an idea first debated under the Nixon-Ford Administration more than 25 years prior to the 1996 U.S. Enrichment Corporation Privatization Act. USEC's privatization and its attendant issues, such as government inventory transfers and subsequent liquidation/ forward sales, led to unintended market consequences, especially for the uranium market.

The USEC-initiated trade action against its European competitors, Eurodif and URENCO, culminated in punitive import duties clearly prejudicial to the French-owned Tricastin GDP. The URENCO Group faired much better, although it is still subject to a relatively small import levy.

This latest market event created a bifurcated SWU market divided along regional lines. The U.S. market is now decidedly less competitive due to more restricted options for utility fuel buyers. By the same token, the European and Asian/ Pacific markets should show the effects of heightened competitiveness and, thus, lower SWU prices, at least in the near-to-mid term.

As will be discussed further, the dominant enrichment issue is not the anticipated future availability of SWU but the availability of economic SWU. A pitched battle has been and will continue to rage over future market share, which is being determined by production cost factors rather than mere production capacity. A relatively lower production cost (gas centrifuge) provides a decided market advantage over a relatively higher production cost (gaseous diffusion). While the eventual outcome cannot be predicted with any degree of certainty, the centrifuge-based suppliers should have a clear advantage.

SWU Demand Rising

The demand trend for enrichment services on a global basis is up. Nuclear power plant operating capacity factors are increasing. operating license extensions are becoming commonplace in the U.S. and a growing trend elsewhere. New nuclear construction is continuing in Asia, and looks likely to resume in Russia. North America and Europe are more remote possibilities, but what looked impossible five years ago now looks at least possible. All contribute to enhanced future SWU needs.

The U.S. Department of Energy's Energy Information Administration (US DOE-EIA) is whistling a decidedly more optimistic tune in its latest forecasts than it has in recent years. In previous years the EIA predicted falling demand while now the analysts look for demand to remain essentially stable through the year 2020. Market forecasts developed by industry trade organizations, such as the World Nuclear Association (WNA), are far more upbeat, predicting a reasonably strong upward trend over the next two decades.

The Reference Scenario published in the WNA's most recent nuclear fuel market report (2001) entitled, "The Global Nuclear Fuel Market: Supply and Demand 2001-2020," shows worldwide SWU requirements increasing from 34.91 million SWU (2001) up to 44.65 million SWU (2020), a total increase approaching 28 percent over the twenty-year period.

While the European Union countries show a relatively flat SWU demand (including France), demand in the U.S. increases by almost 2.0 million SWU (10.78 million in 2001 growing to 12.75 million in 2020) while East and Southeast Asia (excluding Japan) rises by 4.3 million SWU, an increase approaching 200 percent.

RWE NUKEM's projected global demand line has the same shape as the WNA projection, but it is two to three million SWU/year higher in absolute terms. RWE NUKEM believes that tails essays for MINATOM clients in the former Soviet Union and Eastern Europe are lower than prevailing levels elsewhere, which translates into a higher level of demand overall. With respect to the Western World enrichment market (essentially the market not controlled by MINATOM) the WNA projections and those of RWE NUKEM are about the same. Demand still rises over time, but not as dramatically as shown in Figure 1.

The following sections review the significant events affecting the world's SWU providers other than URENCO, which is profiled in the accompanying cyberfeature. Concluding sections discusses the possible market impacts of different scenarios.

USEC Saga

In June 2000, USEC announced its decision to consolidate its enrichment operations at the Paducah GDP. Production at the Portsmouth GDP came to an end on May 11, 2001 and the facility was placed on a "cold standby" status. In theory, this status allows the plant to be able to produce about 3.5 million SWU/year (after an 18-24 month start-up period). Shipping

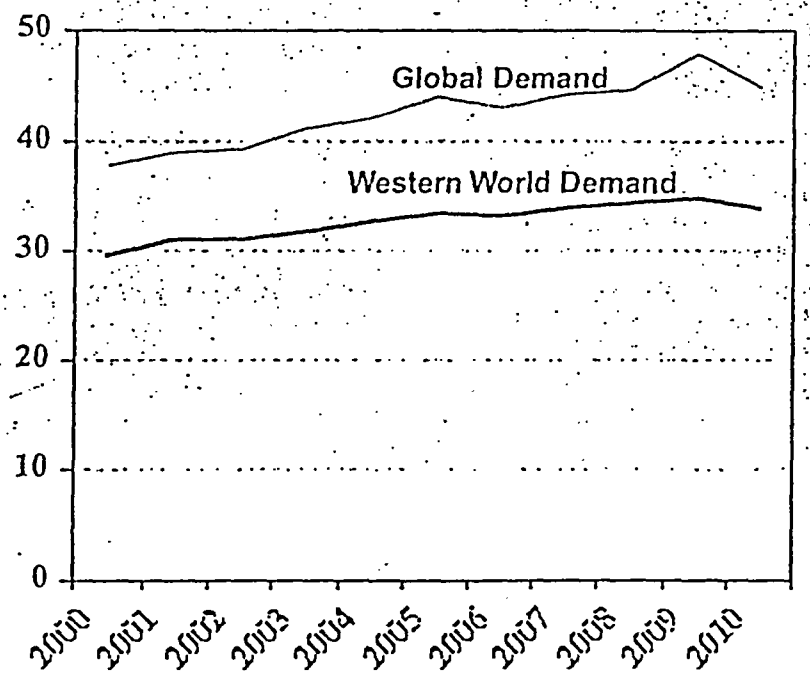
LES-02388

and handling operations continued at Portsmouth until this year, but will be shifted to Paducah by fall. Currently Paducah employs some 1500 people.

In March 2001, the U.S. Nuclear Regulatory Commission (NRC) announced that the operating certificate for the Paducah GDP had been amended to allow enrichment levels up to 5.5 percent U235. Previously, the Paducah facility was limited to an enrichment level of 2.75 percent U235 with the intermediate product being shipped to the Portsmouth GDP for upgrading to customer specifications (4.0-5.0 percent).

According to recent financial filings, USEC estimates that the Paducah GDP could produce a maximum 8.0 million SWU per year, but output for FY2002 was expected to be approximately 5.0 million SWU based upon current power purchase agreements. In September 2000, USEC initiated power purchases from the Tennessee Valley Authority (TVA) at monthly rates varying from 300 to 1780 megawatts at fixed contract prices. The power purchase agreement extends until May 2006. Power purchases under the TVA agreement were expected to provide almost 75% of total electricity needs for Paducah during FY2002.

Figure 1:
Global and "Western World"* SWU Demand 2000-2010



"Western World" demand is defined as the part of the global SWU market that Western enrichers may be expected to enter. Assumes some degree of shared market in Finland, Hungary and Czech Republic.

USEC is pursuing the development and deployment of advanced gas centrifuge technology based upon research, development and construction of centrifuges by the U.S. Department of Energy (DOE) in the 1970's and 1980's. After spending nearly US$3.0 billion on the centrifuge enrichment program, DOE abandoned it in 1985. Although the equipment was said to be effective, its cost was estimated to be so large that full-scale production would have been less economic than the existing GDPs. According to USEC, the company has designed a new centrifuge machine having performance characteristics similar to the previous DOE effort. Ostensibly, the capital cost can be reduced by switching to modern materials (light weight composites), but significant manufacturing issues obviously remain.

(According to a web posting from an American seismologist who worked on the project years ago, the GCEP machines are absolutely enormous, standing 50 feet tall and with a diameter of 30 inches. He estimated rotor speed at 10,000 rpm, which would give a peripheral velocity on the order of 900 m.p.h. Since the Paducah site is more seismically active than Portsmouth-and earth tremors are an enormous hazard to tall centrifuges-there would need to be extensive additional work at the Paducah site to make it suitable for a centrifuge installation.)

USEC continues to fund research work on the SILEX enrichment process (Separation of Isotopes by Laser Excitation) being developed by an Australian firm, Silex Systems Ltd. USEC holds exclusive rights to the uranium enrichment application of the SILEX technology and funds the uranium development program (including milestone payments) based upon pre-determined targets. The project is currently in the Pilot Plant Engineering Study phase which is a precursor to building a pilot plant.

On June 18, 2002, USEC announced that an agreement had been signed with DOE "whereby both USEC and DOE make long-term commitments directed at resolving a number of outstanding issues bearing on the stability and security of the domestic uranium enrichment industry." This agreement addressed several areas which are important to the future SWU market:

- Each year that USEC remains Executive Agent for the U.S. under the US-Russia HEU Agreement, USEC must order and take delivery of LEU derived from at least 30 metric tons per year weapons-origin HEU (approximating 5.5 million SWU); If USEC satisfactorily performs its obligations then DOE agrees to recommend against the removal of USEC as the Executive Agent.
- USEC agreed to operate the Paducah GDP at or above 3.5 million SWU per year (determined by USEC's fiscal year) until six months before it has the permanent addition of 3.5 million SWU per year of new capacity installed based on advanced enrichment technology; In the event that USEC does not expand the planned annual capacity of its centrifuge facility (1.0 million SWU per year) then USEC must continue to operate Paducah at the 3.5 million SWU per year output level; If USEC believes

that a significant change has occurred in the domestic or international enrichment markets such that continued operation of the Paducah GDP at or above 3.5 million SWU per year is commercially impracticable, then USEC can present its position to DOE regarding a change in the production commitment.

- USEC committed to maintaining the ability of the Paducah GDP to operate at an annualized rate of 5.5 million SWU per year which is defined as the ability to ramp-up production within an eight month period to 5.5 million SWU with a product assay of up to 4.95 percent at 0.3 percent tails.
- USEC must initiate commercial operation of a facility utilizing advanced enrichment technology (presumably centrifuge) with an annual capacity of 1.0 million SWU (expandable to 3.5 million SWU) in accordance with specific milestones. The plant must be located at either the Portsmouth GDP or Paducah GDP sites. Important milestones include the securing of financing for the 1.0 million SWU facility (January 2007), begin commercial plant construction (June 2007), begin commercial operations at 1.0 SWU per year (Portsmouth – January 2009; Paducah – January 2010), and expand to 3.5 million SWU per year at Portsmouth (September 2011) or Paducah (September 2012).

Chinese National Nuclear Corporation (CNNC)

The Chinese uranium enrichment program has relied upon Russian technology and support since the 1950's. An enrichment facility utilizing Soviet gaseous diffusion technology was constructed at Lanzhou (Ganzu Province), supplying enrichment services to the Chinese military program as well as initial cores for the Daya Bay NPP.

In late 1992, CNNC entered into an agreement with Russia's Ministry of Atomic Energy (MINATOM) for the construction of new enrichment capacity incorporating Russian-designed gas centrifuge technology. An enrichment plant was constructed at Hanzhong (Shaanxi Province) with the first phase being 200,000 SWU per year and the second stage being 300,000 SWU per year. Current production is estimated at around 400,000 SWU, increasing to 500,000 SWU by 2003.

At the Lanzhou enrichment plant, CNNC is phasing out the GDP facility while a newly-constructed centrifuge facility is expected to reach full capacity of 500,000 SWU per year by 2004/2005. China should therefore be able to produce a million SWU/year with its own centrifuges by mid-decade, and further capacity additions may be contemplated.

In the meantime, however, China's nuclear fuel needs are projected to grow quite rapidly in the latter part of this decade and beyond, outpacing

local capabilities to meet demand. Trade sources indicate that at least one Western enricher has landed a medium-term SWU supply contract for the 2004-2008 period. China is also known to have concluded a number of uranium supply deals as well. The take-home message here is that whatever the overall policies with respect to self-sufficiency might be, the Chinese take a practical, market-oriented approach to nuclear fuel supply.

COGEMA-Eurodif

As detailed further below, the largest event affecting Eurodif in the last year has been its defeat in the trade case brought by USEC. The company's ability to gain any new business in the United States has been seriously compromised, at least pending legal appeals. The result is a re-direction of SWU that would have gone to the United States to points elsewhere in the SWU-consuming world.

COGEMA has announced that upgrades to the Tricastin plant (which initially entered commercial operations in 1979) have resulted in an extension of facility life expectancy until 2015 (+/- one year). Originally designed for a 20 year operational life, the Georges Besse GDP continues to operate at a high efficiency due to aggressive management of O&M costs (staffing reductions and limited maintenance needs) and the stable power costs from the supporting NPP's, which have been depreciated.

Ministry of Atomic Energy--MINATOM

Perhaps one of the biggest future wild cards remains the enrichment segment of the Russian Federation. MINATOM's currently operating enrichment facilities, located at four separate locations, represent an annual nominal production capacity estimated at 20.2 million SWU. This enrichment capacity is based 100% on gas centrifuge technology which has been evolving for more than 40 years.

As is well known in the industry, MINATOM maintains a high utilization rate at the four facilities for a variety of products including blend-stock for the U.S.-Russia HEU program, exports of EUP and fabricated fuel, domestic fabricated fuel requirements and tails upgrading for western enrichers.

Estimates vary widely with respect to exactly how MINATOM allocates its SWU resources and the numbers are subject to wide swings depending on such fundamental assumptions as the level of tails assays. Still, guidance provided by MINATOM itself for the April 2002 profile (see e-library) provides some useful insight.

Thus, if we start with a nominal capacity of 20.2 million SWU/year, and assume a 95% operating rate, we have about 19 million SWU/year to account for. Out of that, MINATOM said that it devoted approximately 26% to HEU blendstock work in the year 2000, which would imply something on the order of 5 million SWU.

MINATOM also indicated that nearly 42% of its year 2000 capacity was devoted to fueling reactors in Russia as well as the Russian-type reactors elsewhere. This is consistent with a low tails assay production posture, and comes to about 8 million SWU. This leaves nominal capacity of 6 million SWU, which could be divided about equally between tails re-enrichment work and export of "commercial" LEU to fuel non-Russian reactors. (Again, the assumption here is that regardless of the nominal "ending assay" for tails re-enrichment work, the actual tails assay may have been lower, consistent with MINATOM policy to use spare SWU capacity to "produce" uranium through underfeeding.) The logical inference is that the source of the much-talked-about 3 million "commercial" SWU from MINATOM would come from redirecting capacity from tails re-enrichment. The level, extent and timing of such a switch is impossible to predict.

As we look to the end of the current decade, MINATOM has said that it intends to install improved centrifuges that would boost capacity by 24% by 2010, which would boost capacity to something like 25 million SWU/year. This time frame also coincides with rising domestic demand, as well as foreign demand that MINATOM is committed to fill (e.g. new Russian reactors in Iran, India and possibly China). Thus, MINATOM's fueling commitments in the 2010 period would come to about 10.7 million SWU. If tails re-enrichment is still going on at (presumed) current levels--and with blendstock needs for the HEU deal still in force-MINATOM could potentially export up to 5 million "commercial" SWU (up from a presumptive 2.5 million -3.0 million SWU/year currently).

Nominal Versus Operable Versus Economic Capacity

As the nuclear fuel industry casts a wary eye on enrichment capacity, the underlying concept of "economic" SWU capacity comes into play. The installed nominal enrichment capacity well exceeds global demand, even in the post-Portsmouth GDP era. For example, Eurodif's George Besse GDP (Tricastin) has a nominal annual production capacity of 10.8 million SWU. However, due to increasing energy costs at higher operating rates, the economic production range has approximated 7.5-8.0 million SWU in the recent past. Clearly, depressed SWU prices were a primary determinant of the facility's economics.

Similarly, USEC's operations at the Paducah GDP (original nameplate capacity of 11.3 million SWU, with about 8 million SWU theoretically operable) are likely to be constrained to no more than 5.5 million SWU. The current operating rate of about 4.5 million SWU annually reflects market share, lower-cost Russian HEU-derived SWU (5.5 million SWU per year), and the availability of low-cost power. Under terms of the recent Memorandum of Agreement between USEC and the U.S. Department of Energy, USEC must maintain annual production of no less than 3.5 million SWU at the Paducah GDP.

URENCO continues to enjoy an enviable position in the global SWU market as a result of its low production cost centrifuges and careful matching of capacity and sales commitments. Rather than commit to a massive capital program involving several million SWU capacity, the consortium gradually built up its productive capacity through modular expansions at each of its three sites (Almelo, Capenhurst and Gronau) to meet forward sales commitments. Therefore, virtually 100% of its annual capacity is considered economic at today's SWU prices.

Regional Market Segmentation

The recently-imposed antidumping and countervailing duty orders resulting from the USEC-initiated trade action in the United States against low-enriched uranium (LEU) imports from European enrichers has resulted in a further bifurcation of the SWU market.

Preliminary affirmative countervailing duty and antidumping determinations were published in the Federal Register on May 14, 2001 and July 13, 2001, respectively. The U.S. Department of Commerce published Final Determinations of unfair trade on December 21, 2001 while issuing negative antidumping determinations for LEU sales from the three URENCO countries (Germany, the Netherlands and the United Kingdom) on the same date. The U.S. government terminated the antidumping cases against those three countries on that date.

On February 4, 2002, the International Trade Commission (ITC) notified the USDOC that the U.S. industry was materially injured by reason of unfair trade in LEU imports from the specified countries. Subsequently, on February 13, 2002, DOC issued countervailing duty orders against LEU imports from Germany, the Netherlands and the United Kingdom and antidumping and countervailing duty orders against LEU imports from France.

A summary of the currently applicable antidumping and countervailing duty percentages is provided in the table below.

Country	Countervailing Duty Duty	Antidumping Duty	Total Duties
France	12.15%	19.95%	32.10%
Germany	2.23	N/a	2.23
The Netherlands	2.23	N/a	2.23
United Kingdom	2.23	N/a	2.23

It should be noted that the total duty applies to the total value of the LEU import as declared by the Importer of Record, rather than the SWU component. Prices for enrichment services within the restricted U.S. market reflect the physical limitations on SWU imports from the Russian Federation as well as the economic penalties associated with the trade sanctions against European-origin LEU.

During calendar year 2000, the NUKEM Separative Work Spot/ Secondary price Range remained relatively stable with the bottom end of the range at U.S. $78.00-79.00 per SWU (generally representing Russian-origin SWU outside of the restricted U.S. market) and U.S. $79.00-82.00 per SWU indicative of the U.S. market price level.

However, that situation began to change drastically in late 2000 as the USEC-initiated trade action against EURODIF and URENCO alleging unfair trade practices was filed on December 7, 2000. The December 2000 NUKEM Separative Work Spot/Secondary Price Range stood at U.S. $79.00-82.00 per SWU. However, the SWU price range widened to U.S. $79.00-86.00 per SWU in January-February 2001, U.S. $79.00-93.00 per SWU during March before reaching U.S. $79.00-105.00 per SWU in April. By May, the lower point of the range increased to U.S. $85.00 per SWU before rising to U.S. $86.00 per SWU in August where it has remained since.

The upper end of the range (again indicative of the restricted U.S. enrichment services market) remained at U.S. $105.00 per SWU during May – July before weakening somewhat to U.S. $102.00 per SWU in August-September and then declined to U.S. $100.00 per SWU in October-December. Since the beginning of 2002, the upper end of the SWU price range has stood at U.S. $104.00 per SWU, a significant increase from the December 2000 price of U.S. $82.00 per SWU.

Global SWU Market – Demand and Supply Balance

When viewed from a total nominal installed enrichment capacity perspective, the worldwide SWU market is clearly over-supplied. However, a crucial element of any market analysis is the selling price level of the commodity or service under investigation. Taking into account prevailing SWU prices and the likelihood that trade actions in the U.S. will result in stable or even depressed SWU prices outside of the U.S. marketplace, available SWU capacity which is considered economic helps to tell the tale.

For example, the Paducah GDP had an original design capacity of 11.3 million SWU per year, of which about 8.0 million is thought to be operable, at least in theory. However, USEC management intends to operate the facility at closer to 5.0 million SWU indicating a currently economic capacity rate of around 65-70%. Likewise, the EURODIF enrichment plant (Tricastin) has a rated nominal annual capacity of 10.8 million SWU but optimal output appears to approximate 7.5-8.0 million SWU per year (70-75% of nominal capacity).

In the case of URENCO's three centrifuge-based facilities, virtually 100% of nominal annual production capacity (currently 5.25 million SWU per year) is considered economic due to the production cost profile of the installed centrifuges.

How do supply and demand square up in the years ahead? The question is not as simple as it sounds, depending as it does on who is asking the question and for what purpose. Let's start with the demand side. If you were a company like URENCO, considering the feasibility of adding new capacity, the fact that the Russians are building new reactors may not be that significant because that is not a market you probably would be able to tap. The same would go for India and Pakistan, where non-proliferation concerns probably would rule out a marketing plan. Ditto Iran, where MINATOM has a life-of-plant fuel deal in place, including spent fuel take-back.

On the other hand, say you were a MINATOM. If extra demand were to appear in the United States, it might avail you nothing since you are already selling the maximum amount allowed by law--5.5 million SWU/year under the U.S.-Russian HEU deal.

Looking on the supply side, your perspective might be different again if you were a Western utility contemplating a possibly tight SWU market in the years ahead. Again, rising demand in Russia, say, would probably have no significance to you if MINATOM will meet that demand regardless. At the same time, trade constraints of one kind or another could sharply limit your choices.

Let's take a look a few years down the road, to 2006, and see how supply and demand might shape up for a Western utility. Looking on the demand side, RWE NUKEM projects a total in that year of 42.7 million SWU. Excluding the Russian reactors (including the ones in former Soviet client states believed to be fueled by MINATOM), as well as India, Pakistan and Iran, relevant demand comes down to about 33.5 million.

Now let's look at supply (see Table 1, below) assuming current prices. The

Table 1:

Demand in 2006:*		33.2 million SWU
Supply:	HEU SWU (USEC)	5.5 million
	USEC production	4.5 million
	Eurodif	7.5 million
	URENCO	6.75 million
	MINATOM exports to West	3.0 million
	MOX	1.5 million
	China	1.0 million
	Japan	0.75 million
	Subtotal:	30.5 million
	Supply shortfall (gap)	2.7 million

*Net of MINATOM commitments to MINATOM Reactors+India-Paksitan+Iran

HEU deal produces a flat 5.5 million, and USEC is currently producing about 4.5 million, for a total of 10 million. Eurodif is producing at a rate of about 7.5 million, for total of 17.5 million. URENCO by that time will likely have a productive capacity of 6.75 million, for a total of 24.25 million. MINATOM's exports to Western Europe and Asia could easily total 3.0 million, for a total of 27.25 million. Then we add in the smaller players: MOX at 1.5 million, China at 1 million, Japan at 750,000, for a total of 30.5 million. Thus, a possible supply gap close to 3 million SWU/year appears in the 2006 time frame.

Is this a cause for panic? Actually, concern is a better word. As mentioned above, we assume current prices. If prices were higher, USEC could justify producing at least another million SWU, and the same might be expected of Eurodif. USEC also has inventory that could help fill the gap, and there may also be some utility inventories to consider. An easing of EU restrictions could open the door to additional MINATOM SWU. (MINATOM should have at least a couple of million extra SWU capacity by then.) Back-up supplies from additional downblending of HEU--in both U.S. and Russia-are other possible sources. While these possible "gap fillers" would doubtless entail higher prices, it is not as though reactors would have to shut down for lack of fuel.

In short, "economic capacity" increases as the economics of production improve.

Although the gap persists indefinitely – at least on paper-it is unlikely to persist if URENCO is able to go forward with its LES-II project. Indeed, the plan for an additional SWU capacity of 3 million SWU/year in the U.S. would come just in time to permit the market to adapt to a temporary tightening with a minimum of disruption. Even if LES-II is blocked in the U.S. for some reason, URENCO should have enough flexibility under its European licenses to add capacity at its currently existing sites to meet most or all of this rising demand.

In summary, the global SWU market over the next decade appears to be in relative balance-or at least "balanceable" in reasonably predictable ways. The primary issue going forward will be the replacement/displacement of older higher production cost capacity (gaseous diffusion) with newer, more cost-effective technology (centrifuge).

Future SWU Market Trends

As one might expect, the future trend for the SWU market will be determined by a myriad of factors including fuel buyer procurement strategies and SWU suppliers' marketing and sales approaches. Separative work availability will be determined by economic factors (production cost constraints) as well as the financial markets' perspective on the investment risk inherent in new enrichment facilities.

Yet new facilities become more and more important as we get toward 2010-2011, as that is the time frame in which USEC is likely to close down Paducah. In theory, USEC will have replaced the Paducah GDP by then with a facility producing 3.5 million

SWU/year from the reconstituted U.S. centrifuge program abandoned in 1985. Even if that plan comes to fruition, it takes another million SWU/year capacity out of the market. If the project does not appear on time, new capacity from URENCO and/or MINATOM would appear to be all but essential.

Political and non-proliferation issues will come into play, especially the likelihood of additional SWU made available from the dismantlement of nuclear weaponry. Trade restraints, either in the form of physical limitations or in the form of import duties, will directly impact supply options in specific regional markets. The potential entrance of so-called "commercial SWU" from the Russian Federation in a post-Suspension Agreement environment, coupled with the marketing control of those incremental SWU, would be another complicating factor in the U.S. market, but it apparently is opposed by the current Administration.

The SWU market seems to be segregating itself both regionally and temporally. Market conditions extending to the middle of the decade appear to be under the strongest influence from the restricted U.S. market, where utility fuel buyers are likely to experience limited supply options and be subject to the financial optimization strategy of USEC, Inc.

Recognizing that URENCO has little uncommitted SWU capacity for the next several years, USEC is in a position to extract sizable "economic rents" from those customers virtually forced to contract with the sole U.S. supplier. Marketing activities by the proposed U.S.-based centrifuge facility proposed by URENCO cannot be expected to begin until the prospects for a new enrichment facility are clarified. Even then, the need to reassure financing sources that the U.S. $1.0 billion required for a new plant will be an economically sound investment, a substantial weakening of the restricted market SWU price is unlikely.

Looking forward, SWU prices in the U.S. market can be expected to remain above U.S. $100 per SWU, and could very well rise from current levels (U.S. $104.00 per SWU) over the next 1-2 years. As indicated earlier, USEC's dominant position and its resultant pricing strategy will be the principal determinant of the SWU price level. While USEC management espouses the desirability of a stable SWU market, financial imperatives will make increasing SWU prices exceedingly attractive, even over the protests of its U.S. customer base.

The enrichment services market in Europe and Asia/Pacific should prove to be interesting. Logic dictates that SWU suppliers with limited or restricted access to the U.S. market will turn their attention to securing increased market share outside of the U.S., thus benefiting fuel buyers in those regions. However, production costs, especially for the Eurodif GDP, can be expected to place some downside limit on SWU prices being offered. In general, fuel buyers outside of the U.S. might find it advantageous to secure long-term SWU supplies during this period of market disequilibrium.

The post-2005 period remains uncertain. An increasing number of factors can influence the SWU market

during the second half of the decade. Will the URENCO gas centrifuge project in the United States move forward? Will additional HEU-derived SWU begin to show itself? Will trade restrictions be modified or eliminated by that time? What will international currency exchange rates do to impact global nuclear fuel trade? What procurement strategies will SWU buyers pursue in covering unfilled SWU needs in the post-2005 time frame?

Another crucial factor affecting the global SWU market will be the actual trend in enrichment services requirements. In the recent past, nuclear power's future seemed much less assured, with early reactor retirements and the phase-out of national nuclear power programs leading to pessimistic forecasts of installed nuclear generating capacity. While that trend appears to be stabilized or even reversed, are there future surprises on the SWU demand side of the equation? History suggests that today's forecasts are never fully realized, partly due to unforeseeable factors and partly due to pro-active responses to the predictions themselves.