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UxC Update

October 2019

A periodic newsletter to keep our clients up-to-date on developments within our company

As we enter the fourth quarter of 2019, there are several important announcements and developments here at UxC that we want to share with our global clients and friends. It's been an interesting year so far, and we are looking forward to an eventful final three months as we head towards 2020.

UxC Celebrating 25th Anniversary at NEI IUFS Special Event

As this year marks UxC's 25th year in business, we are pleased to be sponsoring the special event at the Nuclear Energy Institute (NEI) International Uranium Fuel Seminar (IUFS) in Nashville, TN, on the evening of October 28. We look forward to seeing many of our friends and colleagues from across the industry as we commemorate this important milestone for our company. Chairman and Owner Jeff Combs, who founded the company in 1994, and the rest of the core team from UxC look forward to seeing everyone in Nashville!



Speeches, Articles, and Achievements by UxC Personnel



UxC experts are also staying busy by contributing to several international industry conferences and events.

Anna Bryndza, Senior Vice President, Policy, has been appointed to a two-year term as Chairperson of the World Nuclear Association's (WNA) Fuel Cycle Members Forum. Anna also organized lively panel discussions during the last two Fuel Cycle Members Forums. The first one held in April in Miami, FL covered Uranium Trading, and the second during the latest meeting in London, UK, focused on the Conversion Market.

Philip Johnson, Vice President, Fuel Cycle, gave the keynote speeches at the Red Cloud Klondike Strike (RCKS) Summer Uranium Conferences held in Toronto and New York on June 12-13, respectively. Philip provided UxC's take on the uranium market through the next decade. The RCKS conferences offered a forum for the uranium junior miner and investment community to discuss the latest challenges and opportunities in the uranium market.



Carlyn Greene, Senior Vice President, Spent Fuel, presented a paper at the U.S. Nuclear Regulatory Commission's (NRC) Spent Fuel Management Regulatory Conference (RegCon) held in King of Prussia, PA, on September 17-18, 2019. Her speech, titled "A Single Raindrop - the Importance of Public Perception in the Nuclear Industry," discussed the importance of communicating spent fuel management issues in clear and concise ways.



Jonathan Hinze, President, will be delivering a presentation entitled "SWU-mergence: Reawakening of the Enrichment Market" at this year's NEI IUFS being held October 27-30, 2019 in Nashville, TN.

Jonathan will also be participating on a panel on the topic of Small Modular Reactor (SMR) Market Opportunities during the International Framework For Nuclear Energy Cooperation's (IFNEC) Global Ministerial Conference on "Bringing the World SMRs and Advanced Reactors" to be held in Washington, DC on November 13-14, 2019.

On December 3-4, 2019, **Jonathan** will again be participating as an expert in the U.S. Energy Information Administration's (EIA) International Nuclear Projections Workshop in Washington, DC, where he will be specifically providing his latest perspective on nuclear capacity growth in Northeast Asia.

Nick Carter, Executive Vice President, Uranium, is scheduled to speak on Uranium Market Fundamentals at PDAC 2020 on March 1, 2020 in Toronto, Canada.

UxC Nuclear Fuel Training Seminar

UxC held its Nuclear Fuel Training Seminar in Atlanta, GA, on June 25-27, 2019. This year, we hosted 44 participants from eleven different countries. Participants received in-depth training on the state of



the global nuclear fuel markets, key trends and factors affecting the future of the industry, as well as specific focus on creating effective strategies either for nuclear fuel procurement, sales efforts, investment activities, policy planning, and other objectives. This year's session included hands-on role-playing exercises and interactive group discussions to enhance the lessons.

2020 Atlanta Seminar: We will be holding our next market and training event during June 22-25, 2020 in Atlanta, GA. For additional information regarding the June 2020 seminar or to obtain an invitation letter for a U.S. travel visa, please contact Eric Webb, Executive Vice President, at eric.webb@uxc.com.

Vienna Seminar: UxC is also now evaluating the possibility of holding a second similar nuclear fuel training seminar in Vienna, Austria during early October 2020. The Vienna seminar will provide the same industry-leading content and market insights, but in central Europe for easier access for some clients. We look forward to hearing from interested participants.

Latest Nuclear Market Outlooks

Over the past few quarters, UxC issued several major *Market Outlook* reports covering the various aspects of the nuclear fuel cycle.



In addition to presenting our latest nuclear power forecast scenarios through 2040 and other detailed reactor market data and country updates, our 2019 *Nuclear Power Outlook* (NPO) quarterly reports have included in-depth analysis of key topics shaping the nuclear power markets, such as electric power market reforms

in China, growth in electricity demand due to various factors (e.g., housing electrification, electric vehicles, etc.), the latest status of the emerging market for micro-reactors, as well as world energy sector investment trends.



UxC's *Uranium Market Outlook* (UMO) quarterly report presents our latest uranium supply and demand forecasts, contracting trends, market trends, and price forecast to 2035. Essays in the past three quarterly reports have included a detailed review and long-term prospects for Kazakh uranium production, the recent history and current state of utility uranium procurement with the aim of projecting likely future prospects for new uranium contracting, and an examination of three advanced, low-cost uranium development projects in Canada's Athabasca Basin that offer tremendous potential to meet fuel needs in the second half of the next decade.



The *Conversion Market Outlook* (CMO) update report issued in May 2019 provides in-depth analysis of the unique UF₆ market, including supply and demand fundamentals, contracting activity, as well as price forecasts to 2035. The next full edition of the CMO will be published in December 2019.



The *Enrichment Market Outlook* (EMO) quarterly report provides updates on SWU market developments, including supply and demand forecasts, contracting trends, and price forecasts to 2035. This year's EMO essays have covered various topics, including regional enricher market shares and related market impacts, the latest developments related to high-assay low enriched uranium (HALEU), and how different assumptions for the lifetimes of existing centrifuges could affect enrichment prices in the future.



UxC's *Policy Watch* reporting service this year has been chock-full of updated research and analysis on all the latest policy developments affecting the nuclear markets. Front and center among key policy issues covered in *Policy Watch* this year have been the White House review and decision on the 232 Domestic Uranium Investigation, the U.S. Department of Commerce's administrative review of the Russian Suspension Agreement, additional U.S. trade restrictions placed on China, the potential for trade with Russian entities to be impacted by the end of U.S. waivers on Iran-related sanctions, the political transition in Kazakhstan, Japan's policy regarding nuclear power and reactor restarts, nuclear power policies of China, India, France, South Korea, Spain, Belgium, UK, and Taiwan, U.S. state and federal efforts to support economically-challenged nuclear power plants, and U.S. government inventory dispositions.



In August 2019, UxC issued its annual *Fabrication Market Outlook* (FMO), which presents detailed information and analysis on the global fabrication markets, including the latest contracting activity, market trends, supplier profiles, supply and demand as well as LWR fuel price forecasts to 2035. This year's essay, titled "How Fabrication Fits Into the Bigger Fuel Picture," examines the role that fuel fabrication plays in terms of utility operating and fuel cycle costs and also what recent and near-term new industry trends will affect the way that fuel fabrication fits into utility fuel cycle and procurement considerations in the future.

As always, all UxC *Market Outlook* reports are available as part of our subscription packages.

Recent and Upcoming Special Reports

In addition to our standard reports, the following are some of our most recent and upcoming special reports.

New reports just issued:



Nuclear Zirconium Alloy Market - Nuclear-grade zirconium alloys and products are used in the fabrication of fuel assemblies for the vast majority of current and future nuclear reactor designs around the world. In May 2019, UxC published its seventh edition of this special report, which provides updated analysis of the various sectors that make up the nuclear-grade zirconium sponge, alloy, component, and tubing markets. Using proprietary demand modeling and other unique research results, we identify the latest major trends in this industry by analyzing the global and regional supply and demand balances for nuclear-grade zirconium sponge, alloy, and tubing as well as the supply and demand situation based on reactor fuel types.



Uranium Production Cost Study (UPCS) - In August 2019, UxC issued the fifth edition of this biennial report, which complements the *Uranium Suppliers Annual* and provides production cost curves for operational, planned, and potential uranium projects to identify where expanded and new uranium supply will come from among over 100 worldwide projects to meet future nuclear fuel demand through 2035. Production cost curves for individual projects are presented by geographic region and mining method. An extensive review of various factors impacting production costs is detailed in the new 2019 UPCS.

Upcoming reports:



Uranium Suppliers Annual (USA) - In December 2019, UxC will be releasing the 2019 *Uranium Suppliers Annual*. Sometimes referred to as "The Uranium Bible," the USA contains comprehensive data and information on all the world's uranium suppliers, including detailed sections on planned producers, junior/exploration companies, and intermediaries. Included in the USA are future production forecasts, operational considerations, supplier/project risk analysis, production cost estimates, mill capacities, project reserves, and supplier/facility summaries. The USA also examines supplier marketing strategies, allowing buyers to understand the capabilities and motivations of suppliers, as well as the political, social, and economic environments in which they operate.



Global Nuclear Fuel Inventories (GNFI) - In Q1 2020, UxC plans to publish the third edition of our special report on Global Nuclear Fuel Inventories. Building on the past two editions, the 2020 GNFI will provide the latest information and insights related to nuclear fuel inventories around the world. The next edition of the GNFI will include updated data and analysis of all utility, supplier, trader/financial, and government inventory levels, new insights into the level of utility forward coverage rates and how these may evolve in the coming years. The report also contains forecasts for future inventory buying and disposition and how these look for each of the uranium, conversion, and enrichment sectors. Plus, the GNFI includes enhanced analysis of the market impacts of inventories and key considerations for all market entities.

These special reports are designed to complement our existing *Market Outlook* reports by examining key topics in greater depth as well as other subjects that are not covered in our standard reports.

UxC Supports Atomic Runners in Miami and Lisbon



During the World Nuclear Fuel Cycle (WNFC) conference held in April in Miami, FL and also during the World Nuclear Fuel Market (WNFM) annual meeting held in June in



Lisbon, Portugal, UxC helped to organize runs through the cities with the Atomic Runners group. Many participants proudly wore their custom-made UxC-sponsored t-shirts for the runs.

Note that the next Atomic Runners event will be at the IUFS in Nashville this October!

For more information on UxC activities and reports, please visit our website at www.uxc.com.