Ucore Demonstrates Louisiana-SMC Heavy Rare Earth Processing Flowsheet at Kingston Ontario Commercialization Facility

written by Raj Shah | September 12, 2024

September 12, 2024 (Source) – **Ucore Rare Metals Inc. (TSXV: UCU) (OTCQX: UURAF) ("Ucore"** or the **"Company")** is pleased to provide an update on its latest advancements associated with the commercialization of its RapidSX™ rare earth separation technology. In addition to demonstrating its patent-pending RapidSX™ technology platform at the Commercialization and Demonstration Facility ("**CDF**") in Kingston, Ontario, for the separation of heavy and light rare earth elements ("**REE**"), the Company is trialing a number of ancillary systems to demonstrate the entire commercial flowsheet. These systems will ultimately be incorporated into Ucore's first commercial REE separation and rare earth oxide ("**REO**") production facility in Alexandria, Louisiana – the Louisiana Strategic Metals Complex ("**SMC**").

In parallel with a dedicated technical team, the CDF operates seven days per week, serving multiple purposes, requiring dedicated shift and activity schedules, namely:

- the processing of mixed rare earth oxide ("**MREO**") and carbonate ("**MREC**") feedstocks over thousands of runtime hours to further the Company's two government demonstration projects;
- to develop and demonstrate an array of ancillary

processing systems with the deployment of the RapidSX™ technology platform in a rigorous production environment; and

- conduct product qualification work to meet prospective Western world partners' commercial interests and associated specifications.

Figure 1 – Ucore's 52-stage RapidSX™ Commercial Demo Plant in Kingston, Ontario

To view an enhanced version of this graphic, please visit: https://images.newsfilecorp.com/files/1119/223106_b73bd12ed46fe952_001full.jpg

RapidSX™ Operations

The Company schedules its 52-stage RapidSX™ Demonstration Plant ("**Demo Plant**") to operate 120 hours per week processing tonnes of feedstock in a simulated commercial environment. The completely automated system incorporates approximately 600

feedback sensors, which include monitoring acidity levels (pH), aqueous and organic interface levels, tank levels, and system pressures and flow rates, all of which are controlled by multiple programmable logic controllers ("**PLCs**") and a single operator at a central control station.

Since the Demo Plant was commissioned in late 2023, through a dedicated program of continuous improvement, the Ucore team has developed significant enhancements to the mechanical and control systems that deliver and remove the organic and aqueous solutions to each RapidSX™ stage. This is an essential component of the final "**copy and paste**" knowledge transfer process from the CDF to the SMC to ensure a robust and proven technology platform delivering best-in-class competitive processing versus that of the People's Republic of China.

Full Scope Operations

The purpose of the CDF is the demonstration of the entire rare earth refining flowsheet, which extends well beyond the separation of REEs utilizing the RapidSX™ system. The Company has been engaged in the development and demonstration of the associated operations, including:

- design and testing of an optimized Cerium depletion process;
- direct leaching of heavy MREO and light MREC, eliminating the pre-leaching calcining step traditionally required in the processing of MRECs;
- development of a dedicated yttrium removal process;
- design and installation of a distillation system for the concentration of produced rare earth chlorides and the recovery and recycling of hydrochloric acid;
- design and installation of a neutralization system to recycle and manage the generated rare earth chloride

solutions; and
- development of a batch-level process for light and heavy rare earth oxide production.

End User Qualifications

Since the commencement of Kingston operations, Ucore has had numerous confidential requests for REO products produced to specifications from Western world end users. The CDF produces heavy and light rare earth chlorides from various feedstocks, including monazite, bastnaesite, ionic clays, and xenotime sources. This has been complemented by the development of a dedicated batch-level process area within the CDF for the production of kilogram quantities of rare earth oxides from the generated rare earth chlorides. This is the final processing step of the planned commercial REO production facility.

"It is an exceptionally exciting time for the Company," stated **Mike Schrider, P.E., Vice President and Chief Operating Officer of Ucore**. *"The innovative work being completed at our Commercial Demonstration Facility strongly positions us as a first mover in the Western commercial heavy rare earth processing space as we continue to execute our plan for production in Louisiana.*

"The Company is making daily advancements in our integrated knowledge of applying the chemistry of solvent extraction with our computerized column technology platform to the intricate separations involved with heavy rare earth elements. Our flowsheet development and demonstration work in Kingston are essential risk mitigation steps to help us achieve our Louisiana SMC commercial objectives."

The Company has hosted numerous visitors at the CDF over the past several months, including both potential feedstock and

offtake partners, as well as supply chain alignment discussions with a variety of industry participants.

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About Ucore Rare Metals Inc.

Ucore is focused on rare- and critical-metal resources, extraction, beneficiation, and separation technologies with the potential for production, growth, and scalability. Ucore's vision and plan is to become a leading advanced technology company, providing best-in-class metal separation products and services to the mining and mineral extraction industry.

Through strategic partnerships, this plan includes disrupting the People's Republic of China's control of the North American REE supply chain through the near-term establishment of a heavy and light rare-earth processing facility in the U.S. State of Louisiana, subsequent Strategic Metal Complexes in Canada and Alaska and the longer-term development of Ucore's 100% controlled Bokan-Dotson Ridge Rare Heavy REE Project on Prince of Wales Island in Southeast Alaska, USA.

Ucore is listed on the TSXV under the trading symbol "UCU" and in the United States on the OTC Markets' OTCQX® Best Market under the ticker symbol "UURAF."

For further information, please visit www.ucore.com.

Forward-Looking Statements

This press release includes certain statements that may be deemed "forward-looking statements." All statements in this release (other than statements of historical facts) that address future business development, technological development and/or acquisition activities (including any related required financings), timelines, events, or developments that the Company

is pursuing are forward-looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance or results, and actual results or developments may differ materially from those in forward-looking statements.

Regarding any disclosure in the press release above about the US Department of Defense or the Government of Canada Programs and the expected successful progress and resulting milestone payments from these Programs, the Company has assumed that the Programs (including each of their milestones) will be completed satisfactorily. For additional risks and uncertainties regarding the Company, the CDF, the Demo Plant and ongoing Programs (generally), see the risk disclosure in the Company's MD&A for Q3-2023 (filed on SEDAR on August 27, 2024) (www.sedarplus.ca) as well as the risks described below.

Regarding the disclosure above in the "About Ucore Rare Metals Inc." section, the Company has assumed that it will be able to procure or retain additional partners and/or suppliers, in addition to Innovation Metals Corp. ("IMC"), as suppliers for Ucore's expected future Strategic Metals Complexes ("SMCs"). Ucore has also assumed that sufficient external funding will be found to complete the Demo Plant demonstration schedule and also later prepare a new National Instrument 43-101 ("NI 43-101") technical report that demonstrates that the Bokan Mountain Rare Earth Element project ("Bokan") is feasible and economically viable for the production of both REE and co-product metals and the then prevailing market prices based upon assumed customer offtake agreements. Ucore has also assumed that sufficient external funding will be secured to continue the development of the specific engineering plans for the SMCs and their construction. Factors that could cause actual results to differ materially from those in forward-looking statements include,

without limitation: IMC failing to protect its intellectual property rights in RapidSX™; RapidSX™ failing to demonstrate commercial viability in large commercial-scale applications; Ucore not being able to procure additional key partners or suppliers for the SMCs; Ucore not being able to raise sufficient funds to fund the specific design and construction of the SMCs and/or the continued development of RapidSX™; adverse capital-market conditions; unexpected due-diligence findings; the emergence of alternative superior metallurgy and metal-separation technologies; the inability of Ucore and/or IMC to retain its key staff members; a change in the legislation in Louisiana or Alaska and/or in the support expressed by the Alaska Industrial Development and Export Authority ("AIDEA") regarding the development of Bokan; the availability and procurement of any required interim and/or long-term financing that may be required; and general economic, market or business conditions.

Neither the TSXV nor its Regulation Services Provider (as that term is defined by the TSXV) accept responsibility for the adequacy or accuracy of this release.

CONTACTS

Mr. Michael Schrider, P.E., Ucore Vice President and Chief Operating Officer, is responsible for the content of this news release and may be contacted at 1.902.482.5214.

For additional information, please contact:

Mark MacDonald
Vice President, Investor Relations
Ucore Rare Metals Inc.
1.902.482.5214
mark@ucore.com