

Aclara and Argonne National Laboratory Partner to Develop AI-Enabled Digital Twin for Heavy Rare Earth Separation

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TORONTO, January 15, 2026 - [Aclara Resources Inc.](#) ("Aclara" or the "Company") (TSX:ARA) is pleased to announce that its U.S.-based subsidiary, Aclara Technologies Inc., has entered into a Cooperative Research and Development Agreement (CRADA) with Argonne National Laboratory ("ANL"), a U.S. Department of Energy national laboratory, to develop an artificial intelligence-enabled digital twin for Aclara's heavy rare earth separation process.

Under the agreement, Aclara and Argonne will leverage Argonne's SolventX modeling platform, along with Argonne's leadership in advanced computing, process modeling, and artificial intelligence, and incorporate Aclara's proprietary pilot-scale data to develop a high-fidelity digital representation of Aclara's separation process. The resulting digital twin will enable advanced simulation, optimization, and predictive control of heavy rare earth solvent extraction operations.

Hugh Broadhurst, Aclara's Chief Operating Officer, commented: "This collaboration with Argonne represents a significant step forward in our strategy to deploy a world-class, digitally enabled rare earth separation platform in the United States. By combining our proprietary separation process and pilot-scale data with Argonne's world-class capabilities in advanced computing and artificial intelligence, we expect to accelerate industrial ramp-up, improve efficiency, and further de-risk execution."

Seth Darling, Chief Science and Technology Officer of Argonne's Advanced Energy Technologies, commented: "This partnership exemplifies how combining the complementary strengths of industry, academia, and national laboratories can accelerate the development and deployment of advanced technologies. It also reflects Argonne's role in translating foundational research and unique user facilities into tangible capabilities that support U.S. industrial competitiveness and strengthen domestic supply chains for critical materials."

This collaboration builds on Aclara's ongoing development of a Rare Earth Separation Pilot Plant in partnership with Virginia Tech, which is expected to be inaugurated in March 2026. Together, these initiatives are designed to accelerate the transition from pilot-scale validation to industrial deployment of Aclara's U.S. rare earth separation platform.

Driving efficiency, resilience, and faster industrial ramp-up

Aclara is advancing a modular and interoperable digital architecture to optimize its rare earth value chain. As a central component of this strategy, the digital twin will allow Aclara to model, analyze, and optimize the separation process across a wide range of operating conditions, improving performance while reducing scale-up risk.

By integrating artificial intelligence and data-driven techniques, the collaboration aims to:

- Improve operational efficiency and recovery rates through advanced model-based control
- Accelerate ramp-up timelines by reducing uncertainty during the transition from pilot to industrial scale
- Increase process resilience by enabling rapid adaptation to variations in feed composition and operating conditions

The digital twin will be continuously refined using data generated from pilot campaigns, including those conducted at Aclara's Virginia Tech pilot facility, enabling ongoing performance improvement as operations advance toward commercialization.

About Aclara

Aclara Resources Inc. (TSX:ARA), a Toronto Stock Exchange listed company, is focused on building a vertically integrated supply chain for rare earths alloys used in permanent magnets. This strategy is supported by Aclara's development of rare earth mineral resources hosted in ionic clay deposits, which contain high concentrations of the scarce heavy rare earths, providing the Company with a long-term, reliable source of these critical materials. The Company's rare earth mineral resource development projects include the Carina Project in the State of Goiás, Brazil as its flagship project and the Penco Module in the Biobío Region of Chile. Both projects feature Aclara's patented technology named Circular Mineral Harvesting, which offers a sustainable and energy-efficient extraction process for rare earths from ionic clay deposits. The Circular Mineral Harvesting process has been designed to minimize the water consumption and overall environmental impact through recycling and circular economy principles. Through its wholly-owned subsidiary, Aclara Technologies Inc., the Company is further enhancing its product value by developing a rare earths separation plant in the United States. This facility will process mixed rare earth carbonates sourced from Aclara's mineral resource projects, separating them into pure individual rare earth oxides. Additionally, Aclara through a joint venture with CAP, is advancing its alloy-making capabilities to convert these refined oxides into the alloys needed for fabricating permanent magnets. This joint venture leverages CAP's extensive expertise in metal refining and special ferro-alloyed steels. Beyond the Carina Project and the Penco Module, Aclara is committed to expanding its mineral resource portfolio by exploring greenfield opportunities and further developing projects within its existing concessions in Brazil, Chile, and Peru, aiming to increase future production of heavy rare earths.

About Argonne National Laboratory

Argonne National Laboratory, a leading U.S. Department of Energy science and engineering research center in Lemont, Illinois, was established in 1946 as the nation's first national laboratory. It drives multidisciplinary innovations in physics, materials science, energy, and national security. Renowned for its supercomputing prowess through the Argonne Leadership Computing Facility (ALCF), Argonne hosts *Aurora*, one of the world's first exascale supercomputers capable of over one quintillion calculations per second (exceeding 1 exaFLOPS). This immense power accelerates complex simulations and AI-driven discoveries. In rare earth elements research-essential for magnets, batteries, energy, and defense-Argonne uses advanced computing like Aurora and earlier clusters to model global supply disruptions, reveal molecular mechanisms of lanthanide separation, and develop extraction methods from conventional and unconventional sources, bolstering domestic supply chain resilience.

Forward-Looking Statements

This news release contains "forward-looking information" within the meaning of applicable securities legislation, which reflects the Company's current expectations regarding future events, including statements with regard the anticipated benefits and outcomes of the collaboration between Aclara and Argonne National Laboratory; the development, capabilities, accuracy, and performance of the artificial intelligence-enabled digital twin; the effectiveness of advanced process control, simulation, optimization, and predictive modeling tools; the application of artificial intelligence and data-driven techniques to Aclara's separation process; the operation, timing, and results of pilot plant activities, including the expected inauguration of the Virginia Tech pilot facility; the transition from pilot-scale validation to industrial deployment; anticipated improvements in efficiency, recovery rates, resilience, and ramp-up timelines; and Aclara's strategy to develop and deploy a rare earth separation platform in the United States. Forward looking information is based on a number of assumptions and is subject to a number of risks and uncertainties, many of which are beyond the Company's control. Such risks and uncertainties include, but are not limited to, the factors discussed under "Risk Factors" in the Company's annual information form dated as of March 20, 2025, filed on the Company's SEDAR profile. Actual results and timing could differ materially from those projected herein. Unless otherwise noted or the context otherwise indicates, the forward-looking information contained in this news release is provided as of the date of this news release and the Company does not undertake any obligation to update such forward-looking information, whether as a result of new information, future events or otherwise, except as expressly required under applicable securities laws.

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