

# PRESS RELEASE

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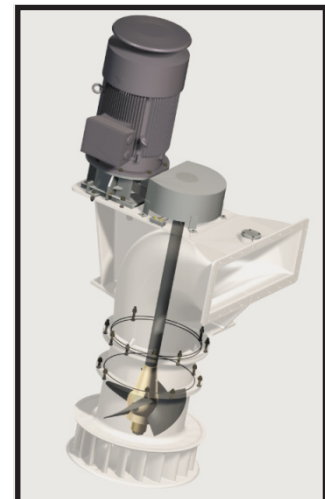


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## **NORTH SIDE ENERGY COMPANY USES MAVEL MODULAR MICRO TURBINE FOR HEAD OF THE U HYDROELECTRIC PROJECT - FIRST TM 10 SIPHON MICRO TURBINE INSTALLATION IN USA**

Jerome, ID and Boston, MA – 28 April 2014 - North Side Energy Company (“North Side”) and Mavel Americas, Inc. (“Mavel”) jointly announced that North Side’s Head of the U Hydroelectric Project (“Head of the U”) near Jerome, Idaho will be the first installation in the USA of Mavel’s proprietary modular micro turbine. CH2M HILL has provided complete engineering and development services for North Side’s project. The Head of the U Project will utilize eight Mavel TM10 Siphon Micro Turbines (“TM10 Turbines”) on North Side’s Head of the U diversion and drop structure. Total installed capacity will be 1.2 MW.

Eric Schulz, CH2M Hill engineering consultant to North Side, said the “Mavel TM10 turbine was selected due to the simplicity of the design and civil works requirements, speed of delivery, ease of installation, overall value and proven performance. This is not untested technology. These machines have been installed all over the world and have proven long term reliability and performance.”



*Mavel's TM10 Siphon Micro Turbine*

Mavel Regional Sales Manager Bruce Sellars noted that North Side had planned to replace the existing diversion and drop structure on their main canal this past winter. Some modifications to the structure design were needed to incorporate the siphon turbines, but the engineering design and civil work were significantly less than what would have been required for building a powerhouse and installing a conventional Kaplan turbine. The simple TM10 Turbine design enabled North Side to maintain their schedule so that they could complete the civil work this

winter and be on-line in the spring of 2015.

The Head of the U is a new hydroelectric project on the North Side Canal system that delivers irrigation water to area farmland near Jerome, Idaho. The project site is a diversion structure that divides the 2,100 cfs flow of the main canal into three branch canals. The project obtained a FERC conduit exemption on January 8, 2014 under the terms of the new Hydropower Regulatory Efficiency Act, which President Obama signed on August 9, 2013.

CH2M HILL, led by Project Manager Dan Murrer, executed a fast-track program of design, demolition, and winter-season construction of a new Head of the U diversion structure. The construction work began in October 2013, as soon as the irrigation season ended. Construction has been completed on-schedule and commissioning is currently underway. The design of the hydropower installation will be conducted in the summer of 2015, with generating equipment deliveries planned from October 2014 to February 2015. Full hydropower operation is expected in April 2015.

Mavel will provide eight generating units, each with a nameplate capacity of 150 kW. The units will consist of one TM10 Turbine, generator, controls, switchgear, spare parts and technical consultancy. It is estimated that the project will generate approximately 4.2 million kWh of energy per year.

The Head of the U Project will be the first installation of Mavel's TM Turbine in the Americas. The TM Turbine series, which includes the TM3, TM5 and TM10, is designed for low head applications ranging from 5 to 20 feet and flows from 5 to 160 cubic-feet-per-second per unit. Power outputs range from 3 kW to 180 kW. Multiple units, such as the case at the Head of the U Project, are often installed in parallel to cover a wider flow range.

Each TM Turbine includes a Kaplan-type runner with four manually-adjustable blades. The runner is connected to an asynchronous generator by a belt drive allowing the turbine and generator speeds to be optimized for the site conditions. During start-up, the siphon is primed by a vacuum

pump and by running the generator as a motor and the turbine as a pump.

The TM



Turbines do not require an enclosed powerhouse. They are installed on support brackets attached to the weir or dam structure. The turbine generator unit, consisting of turbine, generator, draft tube and automated control system, is delivered pre-assembled allowing for simple and fast installation.

The TM Turbine was developed by principals of Mavel for the Czech government over 40 years ago and hundreds of the machines are installed throughout Europe. The rights to the TM Turbine were transferred to Mavel in 1998. Mavel has supplied over 50 TM turbines at 30 locations around the world, including Kyoto, Japan. The city of Kyoto installed a 4 kW TM3 Micro Turbine adjacent to its historic bridge as a symbol of its commitment to renewable energy.

North Side Energy Company is a wholly-owned subsidiary of North Side Canal Company, Ltd., which was established in the early 1900's under the Carey Act in order to divert water from the Snake River and deliver it to arid desert land for agricultural crop production. The Canal Company oversees delivery of irrigation water to 165,000 acres of farmland from April to October of each year. In the late 1980's and early 1990's, four hydroelectric projects were developed on the Canal Company's system and the North Side Energy Company was formed. All projects are PURPA-regulated projects, with energy sold to the Idaho Power Company.

CH2M HILL delivers consulting, design, design-build, operations, and program management wherever clients in energy, water, environment and infrastructure need integrated solutions that provide lasting value. It's 26,000 employees on six continents work on some of the most complex and challenging projects on the planet. The firm has provided full-service delivery in Idaho for over 60 years, serving clients like North Side, who develop, store, convey, and utilize water resources. Hydropower has always been a part of that picture. As North Side's needs evolved, CH2M HILL was there to help: from feasibility assessment, to interconnection assistance, to design of a new Head of the U structure, and finally, to integration of hydropower. Visit CH2M HILL at [www.ch2m.com](http://www.ch2m.com).

Mavel Americas, Inc. is the USA-based 100% owned subsidiary of Mavel, a.s., a Czech / American owned global leader in the supply of turbines (Kaplan, Francis, Pelton and Micro) for hydroelectric power plants from 30 kW to 30+ MW. Over the past twenty years, the company has installed or signed contracts for over 425 turbines at more than 275 sites around the world. Mavel has two production facilities in the Czech Republic.