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FOR DISTRIBUTION**Moore Industries' WORM Flexible Temperature Sensor Improves Accuracy in Measuring Molasses Temperatures**

NORTH HILLS, CA— Moore Industries has released a case study highlighting the use of the WORM Flexible Temperature Sensor by American Crystal Sugar Company, the largest beet sugar provider in the United States. American Crystal was able to use a custom WORM thermowell to more accurately measure temperatures and increase the efficiency of their sugar molasses production.

During the final steps of production of beet sugar, a mixture of sugar crystal and syrup called massecuite is centrifugally spun in a perforated cylindrical basket. This separates the molasses syrup and any non-sugar elements from the sugar. American Crystal was having difficulty accurately measuring the temperature of the molasses using a standard thermowell with a rigid sensor for two main reasons:

- Only the tip of the thermowell could be inserted into the molasses, which runs about 1½-inches deep at the bottom of a horizontal pipe. A large amount of steam from the molasses surrounded the thermowell, reducing its responsiveness to a change in temperature.
- The steam essentially acted as a conductor that heated the rigid stainless steel sensor inside of the thermowell. This meant that the thermowell was measuring the temperature of the steam more than the temperature of the molasses.

American Crystal was able to solve the problem with custom thermowell with a WORM sensor inserted into it. The end of the thermowell is bent at an angle, allowing the one-inch long WORM sensor to lie directly in the molasses. A spring keeps the WORM sensor firmly in place inside the thermowell.

The custom thermowell eliminated the steam from influencing the temperature readings. This meant more accurate readings that respond quickly to changes in temperature. For American Crystal, this has translated to more precise control of the water and steam used in the centrifuge and the ability to separate more sugar from the molasses.

The "Measuring Molasses with a WORM" case study is available at:

<http://www.miinet.com/WhitePapersandArticles/TechnicalWhitePapers.aspx>. More information about the WORM Flexible Temperature Sensor can be found at <http://www.miinet.com/AdditionalContent/TheWorm.aspx>.

About Moore Industries-International, Inc.:

Based in North Hills, CA, Moore Industries is a world leader in the design and manufacture of rail, panel and field instruments for industrial process control and monitoring, system integration and factory automation. The company has direct sales offices in the United States and additional strategic worldwide locations in Australia, Belgium, the Netherlands, the People's Republic of China and the

United Kingdom. The company serves a variety of industries such as chemical and petrochemical; power generation and transmission; petroleum extraction, refining and transport; pulp and paper; food and beverage; mining and metal refining; pharmaceuticals and biotechnology; industrial machinery and equipment; water and wastewater; and environmental and pollution monitoring.

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