



CASE STUDY

INDUSTRY: **UPSTREAM/MIDSTREAM OIL & GAS**



CUSTOMER: ENI Petroleum

LOCATION: Alaska, USA



BACKGROUND: Armstrong International's Flow Measurement Group provided an VERIS Accelabar® flow meter to ENI Petroleum for their makeup gas supply at their Nikaitchuq Olitok Production Pad in Alaska's Northern Slope Region. The VERIS Accelabar® meter was chosen due to very limited straight pipe run within the fuel gas conditioning module. The design of the VERIS Accelabar® stabilizes and linearizes the flow profile in order to better measure flow rates over a large turndown with up to $\pm 0.5\%$ accuracy and the meter does not require any straight pipe run.

SCOPE OF WORK: The VERIS Accelabar® meter for ENI Petroleum was machined from a low temperature carbon steel alloy (LF2) to ensure the harsh conditions of the Alaskan North Slope did not affect the integrity of the meter. The bullet shaped sensor used to measure differential pressure within the meter body was made of 316SS. The pressure rating of the VERIS Accelabar® assembly was ANSI Class 900. The meter was supplied with a 3-wire 100 OHM Platinum Spring Loaded RTD which was installed in an integral thermowell. The RTD provided a temperature input to a multi-variable transmitter for a temperature compensated flow rate measurement.

BENEFITS: The combination of the VERIS Accelabar® and the configuration of the multi-variable transmitter allowed ENI to accurately track the fuel gas consumption of their facility. The design of the VERIS Accelabar® ensures a good fluid velocity profile which obtains the most accurate differential pressure measurement. In addition, because of the reduced throat ID via the patented inlet nozzle, the meter increases the fluid's velocity to values that allow better measurement by the multi-variable transmitter.



The multi-variable transmitter is a device that continually measures differential pressure, static pressure, and temperature to calculate a fully density compensated flow output. The differential pressure and static pressure measurements are taken in the throat of the VERIS Accelabar® which allows the transmitter to correctly compensate for the change in density as the fluid accelerates and flows through the VERIS Accelabar®'s throat.

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