CASE STUDY

The **SDM ECO** was tested alongside a Coriolis meter and a nuclear density gauge, to evaluate their performance for **density measurement**.

CASE STUDY - COMPARISON TEST WEIR MINERALS

Introduction

Weir Minerals was tasked with conducting pipe loop test work for the Sokli project in Finland. This project aims to establish a regional European source of Rare Earth Elements (REE) metals, crucial for various applications including the production of wind turbines. As part of this initiative, Rhosonics was invited to test the SDM ECO sensor in the test loop, alongside a Coriolis meter and a nuclear density gauge, to evaluate their performance for density measurement.

Measuring task

Density determination of a water/solids slurry.
Pipe diameter: DN80 – DN150
Spool material: HDPE
Solids: 45 - 60 wt%
Density: 1450 - 1900 g/l
Temperature: 22°C - 26°C

Instrument used

Rhosonics non-nuclear SDM ECO, installed with a spool piece in a 3-6 inch pipe.

Fig. 1: The Rhosonics SDM ECO HMI and transmitter

Our solution

Weir Minerals invited three suppliers of density and flow meters to validate their density-measuring methods. These suppliers employed different technologies to determine slurry density:

1. Radiation (Nuclear)
2. Acoustic impedance (Ultrasonic)
3. Flow meter (Coriolis)

These technologies were compared over two weeks, during which data from each measuring instrument was collected and analyzed.

Results

The purpose of this visit was to test the MPC (multi-point calibration) and accuracy of the SDM ECO at Weir Minerals' test loop center in Venlo. This opportunity allowed us to gain extensive insights into the capabilities of the SDM ECO.

Comparison data

The measurement data of the three meters were recorded and compared during the operation. The green line shows the measuring results of the Rhosonics SDM ECO, the red line represents the radiation-based technology and the grey line shows the Coriolis meter. The Rhosonics SDM ECO and Coriolis matched with the reference of laboratory samples.

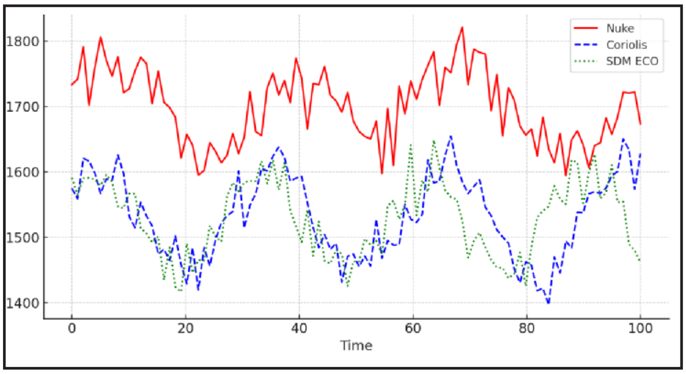

Fig. 2: Trend showing the Rhosonics SDM ECO results versus the radiation-based density meter and Coriolis meter

For further information

Please contact Rhosonics
Phone: +31 341 37 00 73
Email: info@rhosonics.com
Website: www.rhosonics.com

RHOSONICS
Proven Process Insights

ADDRESS
Hoge Eng West 30
3882 TR Putten

CONTACT
+31 341 37 00 73
info@rhosonics.com