

# Processing Plant Makes Great Strides in Safety, Convenience and Economics

## RESULTS

- Easy installation and reduced installation costs
- Reduced maintenance cost
- Remote configuration
- Eliminated training and health screening costs
- No dangerous materials to handle

## APPLICATION

Soy flakes and cake hopper level

**Application Characteristics:** Solid material with dusty vapor space; dielectric constant in the 2.5 to 4 range, or higher. Vessel less than 1 m.

## CUSTOMER

A soy processing plant in India

## CHALLENGE

At this processing plant, soy flakes and cake are carried by a conveyor belt from a one meter high hopper to the mill. A nucleonic device is used to measure the level of product in the hopper. Level measurement in the hopper is important to avoid over-feeding.

Although the nucleonic instrument worked well in the dusty environment and was non-intrusive, it had some significant operation costs. Operators who work with nucleonic devices need special training and are required to receive regular health screenings. Applying for and maintaining approvals to operate it from the Atomic Research Institute were difficult and time consuming.

Added to these costs and inconveniences was the ever-present concern of having a radiation source in the plant and the difficulties of handling it. They needed a better solution.

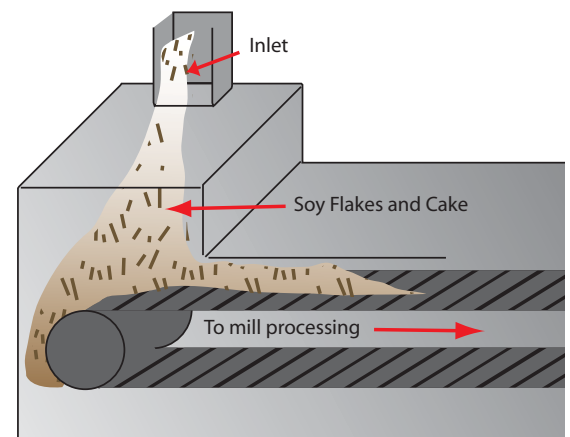
## SOLUTION

They found a better solution by replacing the nucleonic device with the Rosemount 3300 Guided Wave Radar Level Transmitter. The 3300 is a loop-powered level transmitter which operates on TDR (Time Domain Reflectometry) technology.

Microwave pulses are guided down a probe immersed in the process media. When a radar pulse reaches a material with a different dielectric constant, part of the energy is reflected back to the transmitter and the



*The Rosemount 3300 proved far safer, more economical and more convenient than the nucleonic gauge. It was also more cost-effective to install and operate.*



*A schematic drawing illustrates key components of the soy hopper.*

distance is calculated. The transmitter is not affected by dust and provides high reliability with low maintenance.

Because this vessel was so small, a rigid single lead probe was determined to be the best fit for this application. No special approvals were needed and installation, through a 1.5" threaded connection, was simple.

Commissioning and configuration were easily carried out with the Windows-based software package, Radar Configuration Tools (RCT). RCT cuts costs by streamlining configuration and calibration verification. It also provides diagnostics to assist with any troubleshooting.

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### RESOURCES

#### Rosemount 3300

<http://www.emersonprocess.com/rosemount/products/level/m3300.html>

#### Rosemount Technical Note - Guided Wave Radar in Solid Level Applications

Document Number: 00840-2300-4811



*Rosemount 3300 Guided Wave Radar Transmitter with rigid single lead probe.*

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