When the flow meter becomes unreliable

Client- RB tech, User- Warna sugar- Warna Nagar

Introduction

Shree Tatyasaheb Kore Warana Sahakari Sakhar Karkhana Ltd." (Warana Sugar Co-Operative), Warananagar, Dist. Kolhapur, is a well-known co-operative sugar plant in India founded by late Tatyasaheb Kore, the Founder and Great Visionary Leader of the Co-operative Movement in Western India. To address environmental concerns, he advises adding more project activities such as co-generation power plants, BNG gas plants, and bio-fertilizer plants, among others, using waste material and waste water. The main product of this factory is still sugar. Raw sugar is taken from the cane in a sugar mill and then processed for a variety of consumer and industrial uses. Before adding water and crushing the sucrose juice with heavy rollers, the mill cleans, cuts, chops, and shreds the cane. The liquid is then mixed with other ingredients before being processed into granulated sugar or other products through a number of sophisticated procedures. During this phase, flow meters are employed in a number of locations.

The Problem-

The flow meter is used by Warana Sugar to measure the flow of juice made from sugarcane. The flow was accurate at the factory, and the flow meter was placed correctly. It was used to determine the weight of the cane juice as well as the concentration value. The meter had to compute without

being blocked or needing any maintenance. The meter was installed between the sugar cane press and the storage tanks. However, the flow meter was unreliable, and the readings were inconsistent. As a result, the Warana team requested Manas to assess the situation and resolve the problem.

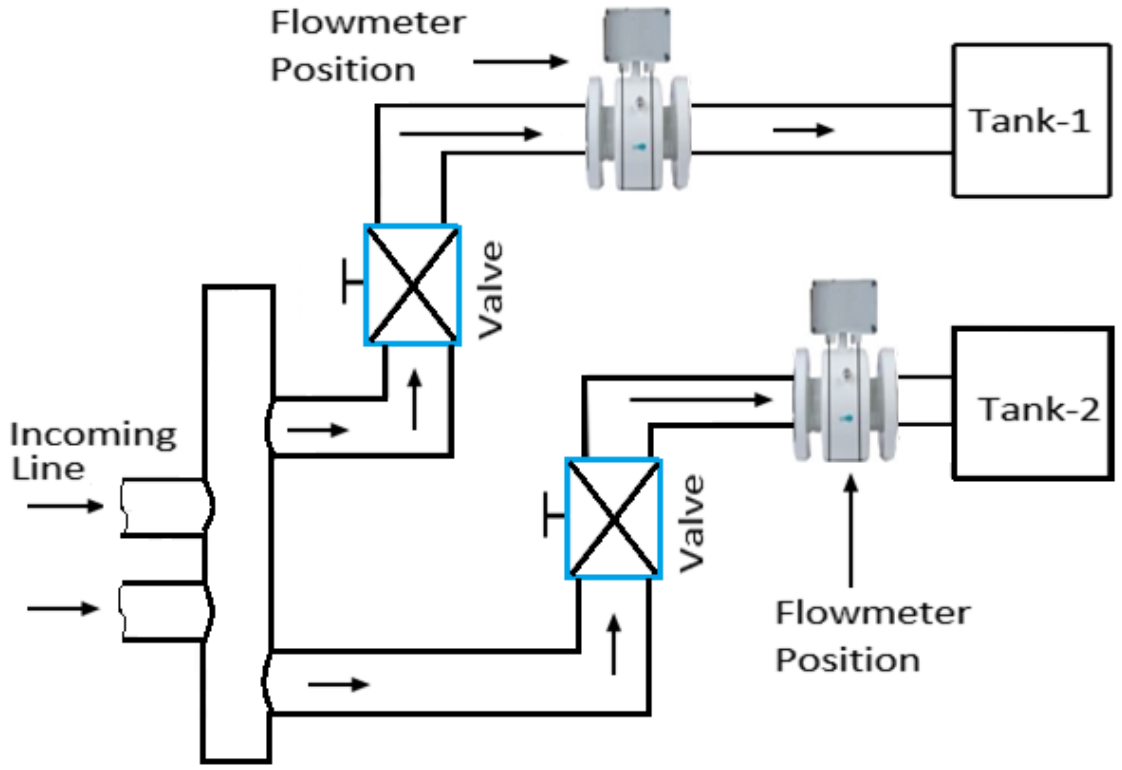

Fig-1: Original Installation

The Solution that worked-

A flow meter is delivered with proper commissioning and installation guidelines. Yet, even after checking all the technical specifications, the fact was that the meter was not working properly. So Manas team visited actual location at Warana Sugar site to check all possibilities of faulty readings of flow meter. Despite the fact that the meter was properly fitted, the juice pipeline was linked to the flow meter and tank in a straight line. Second point was the temperature of the juice was nearing the boiling point that was totally undesirable situation. As the pressure in the juice line starts decreasing the liquid tends to produce bubbling. This bubbling was preventing the right measurement. To avoid this a vertical U section of adequate height was introduced after the meter. This created some back pressure and in turn the bubbling stopped.

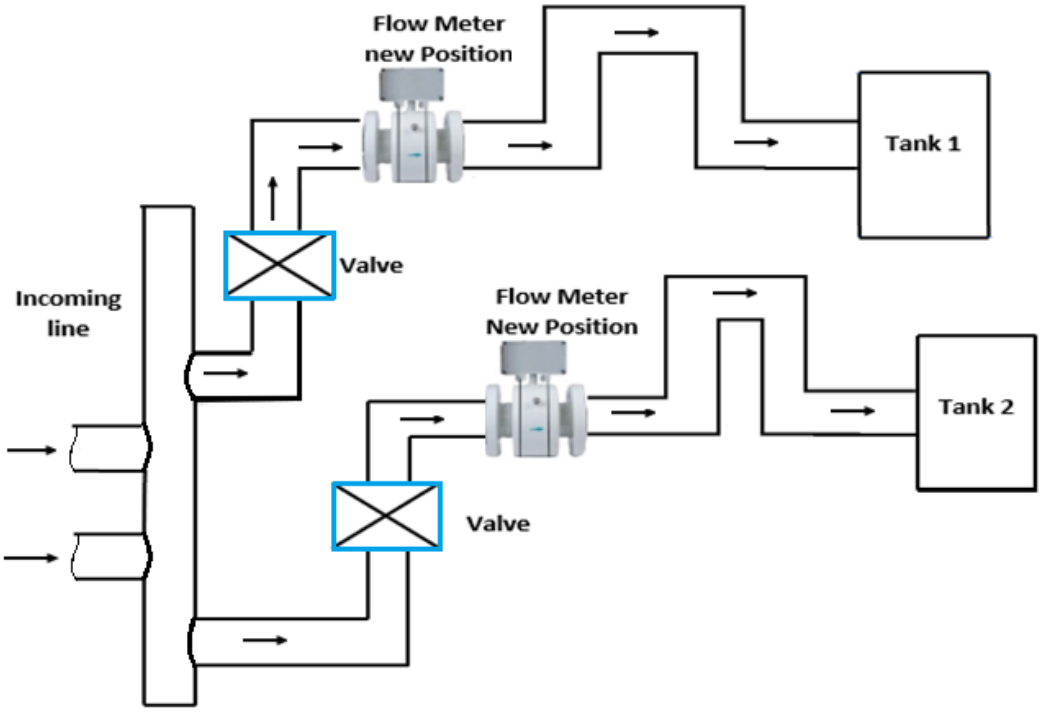

Fig-2: Rectifies Installation

After all the modifications were done, flow fluctuations stopped and the meter started showing stable and consistent readings. Since then, the flow meter is working satisfactorily till date. Warana sugar team was pleased the way Manas team solved the problem.