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Episode 54 Keeping It Salty Commercial

In this addendum to the brine tank podcast, hosts Mike and Denise delve deeper into the complexities of commercial and industrial brine tanks.

Overview of Commercial Brine Tanks

Commercial brine tanks, particularly those used in industrial settings, are significantly larger and more complex than their residential counterparts. These tanks often handle enormous amounts of salt and are integral to operations that use top-mounted fiberglass controls or face-piping steel tanks. The sheer size and the control systems can be daunting, with valve nests that might seem overwhelming to manage.

Brine Management in Large Systems

Commercial systems typically utilize a brine maker—a silo into which a tractor trailer dumps salt. This salt is then conveyed through an auger system into a tank that produces saturated brine. Unlike smaller systems that have a single brine tank, these setups often involve a day tank with a sophisticated float system to manage the brine levels more precisely.

Challenges with Large-Scale Brine Systems

One of the main challenges in managing these systems is ensuring that the brine draw process is controlled accurately. Systems like the Fleck valves (models 2900 and 3900) operate on a single cycle, drawing brine until the tank is emptied. This method can be risky as it might lead to excessive brine being drawn into the system, potentially causing damage to equipment like high-tech boilers.

Advanced Control Systems

To address these challenges, some newer systems like those from Clack feature divided cycles for brine draw and rinse. This separation allows for more precise control over how much brine is drawn and when the process stops. Adjusting these settings is crucial to prevent the overconsumption of brine and ensure efficient operation.

Solutions for Managing Brine Draw

For systems without the advanced features of divided cycles, operators might use solenoids timed to shut off after a specific interval, ensuring only the required amount of brine is drawn. This method, while effective, demands careful calibration and can be harsh on the solenoids due to the concentrated brine.



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Considerations for Retrofitting

In situations where older systems require updates, retrofitting with newer controls such as the Fleck NXT2 timer or adjusting existing setups to include timed solenoids can be necessary. These adjustments help in managing the draw from large brine tanks more effectively, avoiding the pitfalls of uncontrolled brine flow.

Engineering and Custom Solutions

For extremely large systems, custom solutions such as specialized grids for brine tanks or unique float systems might be required. These customizations are essential in systems where the standard configurations are inadequate due to the scale of operation.

WQRF Water Contaminant Map

<https://www.wqrf.org/map.html>

USGS Water Data Map

<https://dashboard.waterdata.usgs.gov/app/nwd/?region=lower48&aoi=default>

WQA National Convention

<https://www.wqa.org/convention>

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