

STATIC SOLUTIONS SECOND LINE BLUE

Lightning and static protection for tanks with guided wave radar systems

Radar level sensors and static



In 2009, an operator in North Dakota began installing guided wave radar level sensors in fiberglass produced water tanks in their Sanish Field. The purpose of this installation was to secure compatibility with the company's SCADA system, allow reading without climbing tanks, and secure additional accuracy and reliability.

Unfortunately, after six months the systems began to unexpectedly trip off line. There was no apparent reason, and the problems occurred at random intervals ranging from once a week to once in six months. When the systems tripped, all data was lost, and a maintenance tech would have to make an unscheduled trip to the site, and manually reset and recalibrate the system on-site. The actual equipment never seemed to be damaged, so there was no cost to replace anything. But there was the nagging problem of being without data and having to send a tech out to fix this specific problem.

Initially, operating and maintenance personnel were unable to determine the cause of the problem. They suspected static inside the tank may have been a contributing factor, so they checked the systems to assure that they were installed and grounded to manufacturer specifications. They also checked programming and calibration, and added additional grounding to the more problematic sites in the form of ground grids. However, the problems persisted.

As part of a separate project, the same company equipped their produced water tanks with Lightning Master in-tank static drain (ITSD) systems. This was done to reduce the likelihood of static and lightning caused ignition of those tanks. However, technicians immediately noticed an unintended benefit: the radar level sensor systems stopped tripping off line. Operating personnel tested the ITSD systems on persistent problem tanks, and demonstrated a dramatic and immediate difference in improved reliability and reduced down time.

Master Electrician Jimmy Anderson summed up their experience succinctly with his observation, "It is unbelievable how much better these things work with the static drains in the tanks. We now plan to retrofit all existing and to equip all new radar sensor equipped fiberglass tanks with ITSD's regardless of lightning and static considerations. That way, we'll only pay for one benefit, but enjoy two."