

Featured Operator Story

This article was coauthored by Bruce Kaiser, President of Lightning Master Corporation, and Master Electrician Jimmy Anderson.

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In 2009, one of our operators in North Dakota began installing guided wave radar level sensors in fiberglass produced water tanks. The purpose of this installation was to secure compatibility with the company's SCADA system, allow

reading without climbing tanks, and enhance accuracy and reliability. After about six months, the radar 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.

Operating and maintenance personnel suspected static inside the tank may have been the cause of the problem, so they checked the systems to assure that they were installed and grounded to manufacturer specifications. They also checked programming and cali-

bration, and added additional grounding to the more problematic sites in the form of ground grids. However, the problems persisted.

"The radar level sensor systems stopped tripping off line. Operating personnel found an immediate improvement in reliability and reduced down time."

The company equipped their produced water tanks with Lightning Master in-tank static drain (ITSD) systems - this

was initially 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 found 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."



About Lightning Master

Lightning Master is a full service, full spectrum static solutions and lightning and transient protection company **servicing the oil and gas and chemical industries since 1984**. Our complete line of products and systems is backed by our worldwide support and customer service. Lightning Master has become recognized internationally as the industry leader in lightning and static protection.

Unparalleled Customer Service · We're with you every step of the way

Site Survey and Evaluation

- Our field engineers create a detailed report with the findings and recommendations on your site
- Our team of experienced engineers perform forensic analysis of lightning and static damage

System Design

- We custom-tailor site-specific protection
- We help you write specifications and best practices that meet your specific needs

Products

- Bonding and Grounding
- Surge Protective Devices
- Structural Lightning Protection
- LMC In-Tank Static Dissipators*

Customer Service

- Turn-key installation by Lightning Master-employed crews
- Training, supervision, and ongoing support of Customer personnel or contractors
- Lightning Master approved installation contractors (in selected areas)

*PATENT PENDING

Industry Leaders

Lightning Master Principals serve as members of the National Fire Protection Association NFPA 780, Committee on Lightning Protection, the American Petroleum Institute API 545, committee on lightning protection for hydrocarbon storage tanks. They also served as principal members of NFPA 781, Committee on Lightning Protection using Early Streamer Emitting (ESE) Air terminals and the Institute of Electrical and Electronics Engineers IEEE 1576, committee on lightning protection using charge transfer (static dissipation) systems.

Technology Development

- Lightning & Static Protection Systems for Salt Water Separation/Disposal Tanks & Batteries *
- Flowback Tank Static Protection Systems*

*PATENT PENDING

