ThermOmegaTech®

Success Story:
GURU® Rebuild Program

East Coast Rail Company Utilizes the GURU® Plug to Keep Their Locomotives from Freezing

Freeze protection is essential for locomotives during winter months to prevent catastrophic damage to equipment. A diesel locomotive's cooling system is at risk of freezing when the locomotive is turned off. If the cooling water freezes, it can cause the piping and tanks to crack, resulting in extensive damage, lengthy repairs, and interrupted schedules.



Operators could keep their locomotives running at all hours to prevent a freeze-up, but that can contribute to air pollution and fuel waste. Another way that is more cost-effective and efficient is to install ThermOmegaTech's GURU® Plug.

The Opportunity

The GURU® DL2.1 thermostatic drain valve is installed at the lowest point within the cooling system and automatically responds to engine coolant temperature. The Plug will snap open and drain the system if the water temperature reaches the Plug's set point, typically 35°F. This provides almost a full one-inch bore to rapidly drain a typical locomotive's coolant system before freeze damage can occur. The Plug can be reset when the operator is ready to refill the locomotive and return it to service.



SMS Rail Lines, a one-stop provider of rail distribution services to businesses along the Washington DC to Boston corridor, is based in Bridgeport, New Jersey, and has been using ThermOmegaTech's GURU® Plugs for over a decade on their locomotive cooling systems and compressors.

SMS Rail Lines operates over 6 miles of track throughout Pureland Industrial Park in Bridgeport, New Jersey, providing service daily, including on-demand rail switching and daily interchange with Class I railways CSX Transportation and Norfolk Southern Corporation. SMS Rail Lines also offers rail-to-truck and truck-to-rail transloading, warehousing, distribution services, and rail car storage at this location, with 12 locomotives in service at any given time.

"We normally have 12 to 14 locomotives in service at any given time," General Manager Brian Murray explains. "Some of our locomotives have only a single GURU if they are plumbed in a way where everything can drain to a central location. We have a couple that have a second GURU to handle additional low points in the cooling system. Our GE locomotives have 4 GURUs. They have 2 GURUs to handle low-point general draining and 2 on the low-pressure heads of the water-cooled air compressor."

Using the GURU® Plugs

SMS operators have previously used other freeze protection devices on their locomotives.
"We initially used 'that other name brand.' It would occasionally open while the engine was hot and running," said GM Murray. Because of this, he looked for another solution and was introduced to ThermOmegaTech's GURU® Plugs over ten years ago by then-product manager Dana Logue.



The GURU® Plug satisfied their needs and came with an additional perk – the GURU Rebuild Program. ThermOmegaTech® offers a rebuild program for the self-actuating GURU® Plugs, which protect thousands of locomotives from freeze damage annually.
The program allows customers to return their old GURU® Plugs to be cleaned, refurbished, retested, and returned, so customers get back an almost brand new valve.

The Rebuild Program & the Result

"We are very happy with ThermOmegaTech®, and we think the GURU® Plug is terrific. We have never had a GURU fail to open when necessary. As the end user, we should probably do a better job at keeping track of which GURUs are in which locomotives and how old they are", stated GM Murray.

Luckily for SMS Rail Lines, there's an easy way to track that! Each GURU® Plug has a yearly-rotated color cap which is also laser marked with its month and year of manufacture. ThermOmegaTech® recommends changing the GURU® Plugs every 18-24 months, as the GURU® Plug's actuator loses a small amount of stroke as it ages beyond one year. This loss of stroke causes the release temperature and the manual reset temperature to creep upward. While this is a "safe" tendency for freeze protection, the upward creep can eventually cause nuisance dumping.

The colored caps rotate through 5 colors over 5 years and serve as a visual indicator of the year it was built. Maintenance personnel can compare the cap's color against our chart to determine when it needs to be sent back for rebuild. SMS has taken advantage of this perk and utilizes the rebuild program yearly.

"We send in about 4 or 5 valves per year for rebuilding to have them on hand. Our cost savings are significant as we have a lot of older GURUs around, so it makes sense to rebuild them," says GM Murray.

And when they come back, rebuilt, and refurbished, GM Murray says they are good as new, and they've never had any issues. "In my experience, all the folks at ThermOmegaTech® are genuinely interested in providing to the railroad industry effective, reliable solutions. The staff is always accessible and willing to work cooperatively with the customer to examine the need and suggest the appropriate product," says James Pfeiffer - Superintendent of Operating Practices.

"Customer feedback is welcomed, technical questions are quickly answered, and the engineering department is seemingly always working on something new and improved. And they do all this while maintaining a first-class level of customer service," he adds.