

Tower Ring method for cleaning wind towers significantly raises safety and environmental standards.

HEALTH AND SAFETY EXPERTS will tell you: “The best way to reduce risk, is to eliminate the risk.” Pretty simple logic, right? Try applying that philosophy to cleaning 300-foot-tall wind towers!

Wind power generation has been around for decades now. Local, state and federal initiatives are supporting (and in many cases, mandating) the movement toward renewable energy production—with wind power leading the way. While wind energy production has many proven advantages over less “green” electrical power generating sources, wind turbine generators (WTG’s) are still subject to mechanical failures that can result in environmental, health, and safety impact. For example, gearboxes can (and sometimes do) leak. Seals, fittings, and hoses can (and sometimes do) fail. These leaks and failures can allow lubricants, mineral oils, synthetic oils, hydraulic fluids, and greases to escape. With the major components of the WTG being housed uptower, any significant oil, grease, hydraulic leak or catastrophic failure is going to have those substances running down the length of the tower—making their way to the ground/soils or water table. Not only is the leak unsightly (ugly), it also creates an environmental hazard.

Traditionally, the preferred way to clean WTG towers was to have technicians hanging/suspending from ropes; raised in a man lift, boom truck, or crane; or attached to a hoisted scaffolding system (sometimes more than 300 feet above the ground). In addition to the possibility of falling from heights, these methods submit technicians directly to wind, heat, rain, and other weather conditions—exposing them to even greater risk.

Brothers Sonny and Broque Fraughton of Evanston, Wyoming-based Gladiators Cleaning, make their living washing trucks and cleaning coal mining equipment. Through their knowledge of and expertise with heavy equipment and vehicle cleaning, the pair devised a practical and ingenious solution and applied it to the wind power industry. Instead of using people to clean the towers, they developed a high-pressure, heated water, washing “ring system,” that fits entirely (360°) around the tower, to do the work (see photo).

For the past two years, the brothers have been working with a team of wind energy professionals, electrical engineers, and auto wash system experts



to perfect their “un-manned” WTG tower cleaning system. After developing and patenting their tower ring apparatus, they took their equipment (remote controlled hoist truck and pressure wash system) out to the wind farms. There, they met and partnered with Greener Solutions (www.greener safer.com) to identify and utilize safe, high-powered, environmentally friendly cleaning chemicals to safely and quickly remove the dirt, oils, greases and other contaminants from the WTG towers and equipment. In addition, they also employ the use of microbial based cleaners/de-greasers for bioremediation (using hydrocarbon feeding microbes to “eat” the contaminants).

The risks associated with high winds and dangerous weather (safety regulations) related to technicians hanging from ropes or being raised in man lift baskets, are much higher than when using the unmanned ring tower cleaning method and equipment.

This allows for the ring system to be safely utilized in scenarios where traditional methods would put people and their equipment at higher risk.

It also means less stand-by/down time when wind conditions become marginal. As a result, Greener Solutions and Gladiators Wind are now approved product and service providers for clients like: Suzlon, PacifiCorp Energy, EDF, EDPR, GE Wind, Iberdrola Renewables, among others. The unique ring apparatus design and industrial cleaning methods are giving OEM’s, wind farm owners, and service providers a safe, efficient, responsible option to consider when it comes to WTG tower cleaning. ↴