

Palo Verde Nuclear Generating Station Enhances Safety and Training for Crane Operators and Signalers with Vortex

In terms of power output, Palo Verde Nuclear Generating Station has been the USA's largest nuclear plant since 1992. The plant's objective is to lead the industry — not only in terms of raw output, but also in knowledge, training, and employee engagement: Palo Verde has learned through experience that the safest plants are also the best operating plants.



"With that mandate in my back pocket," says Palo Verde Rigging Training Instructor Bob Armstead, "I'm looking to provide the most effective training possible. I am not going to spare any expense for training in any way, shape, or form." Indeed, preventing lift incidents is a constant focus for the former (retired) USAF Airman. Like every lift professional in the US nuclear sector, he was particularly troubled by a March 2013 incident at Arkansas Nuclear One that involved the collapse of a lifting rig being used to move a 600-ton main generator stator. The failure resulted in one fatality and several injuries.

Palo Verde's use of simulators for training really began with a visit to another plant in the region. "They were really proud of their new simulator," Armstead says, "and we just thought it was a great idea." After visiting other nuclear plants that were already using simulation-based training, Armstead and training management determined that the Vortex® Simulator, designed and developed by CM Labs Simulations, would be the best training solution for the Palo Verde Nuclear Generating Station. "The Vortex Simulator is definitely a step above — it's really best-of-class in the simulator world," Armstead says.

The Organisation

Based in Arizona, Palo Verde Nuclear Generating Station has led the US in power production since 1992.

The Situation

As part of their vision to lead the industry in knowledge and training, Palo Verde Nuclear Generating Station is constantly striving to find the best ways to provide the most effective training possible.

The Solution

The Vortex Simulator is one of the cornerstones of Palo Verde Nuclear Generating Station's crane operator and signalmen training safety program.

Every six months, one of the plant's three reactors is shut down for a refueling outage—a process that takes upwards of four to five weeks. With high costs associated with every day of shutdown, outages are busy times for the plant's riggers.

"Communication is the key to making a successful lift," says Armstead.

"Not just communication, but trust. Everyone needs to know, are you giving me the right signals, are you responding to my signals properly, and do we both know what 'stop' looks like. "We get people from many parts of the country that don't speak Arizonan," he jokes, "but the reality is, communication is a consideration when you get so many people from different parts of the country.

The Vortex Simulator helps make them comfortable, and makes them more confident, so the work can proceed without the distraction of what did you mean by that. With that kind of high impact orientation for new employees, you can perform the reactor de-stack operation in less than a day."

"The crane operator can immediately respond if not given the proper hand signal or verbal indications," Armstead says. "The operator can give instant

feedback on what they're doing or saying wrong, or how they can get into position to see what they need to see, for a safe, effective, and efficient pick." "Plus, our qualified signallers get to go in and enhance what they know. With an operator correcting and coaching, it helps them learn the proper communication techniques."

Armstead says that the Vortex Simulator has also played a key role in Palo Verde's recent recertification with OSHA's Voluntary Protection Program (VPP) Star status designation.

"The Vortex Simulator is definitely one of the cornerstones of our crane operator and signalmen training safety program," he says. Approval into VPP is OSHA's official recognition of the outstanding efforts of employers and employees. The Star Program recognizes the very best workplaces that are in compliance with OSHA regulations and that operate outstanding safety and health management systems for employee protection. "In the end," Armstead says, "the Vortex Simulator has enhanced our work

— it's given us a lot more confidence in doing the job. Plus, we don't have to run the cranes, we can actually do it here in the simulator, and then we're not worried about damaging equipment or injuring personnel." Bob Armstead has some final words of advice for other companies that are considering the purchase of a training simulator:

"We in the nuclear training business are always looking for ways to enhance and build better training programs for all employees not for just today but for future needs. The Vortex Simulator gives us an opportunity to expand to the future needs of our plant and business. At PVNGS our vision is to lead the industry in knowledge and training."

