

BRIDGING THE KNOWLEDGE GAP WITH OPERATOR TRAINING SCENARIOS

When five experienced boiler operators prepared to retire from a steam plant serving a leading academic medical center, they needed to ensure the system was in good hands. The loss of any one boiler could disrupt service at a cost approaching **\$50,000 per day**. Losing decades of institutional knowledge while onboarding five new operators created a significant operational risk. That's where **Apperture Solutions** stepped in.

A DIGITAL TWIN FOR REAL-WORLD READINESS

Working closely with plant leadership and operations personnel, Apperture Solutions designed and delivered a dedicated training simulation platform.

The team developed **10 realistic training scenarios** based on historical disturbances and operational challenges, including:

- Boiler startups and sequencing
- Drum level excursions
- Steam header pressure upsets
- Feedwater pump failures
- Emissions control events
- Fuel oil backup operation
- Equipment failures and abnormal conditions

Operators can now repeatedly practice normal and abnormal operating events in a safe environment that mirrors the production system. The simulation also allows the team to train on future technology before implementing changes in production

MEASURABLE RESULTS, GREATER CONFIDENCE

The simulator enabled the site to train **five new operators** without affecting ongoing operations while preserving critical knowledge from retiring personnel.

Key outcomes include:

- **30 - 40% faster operator qualification**
- **\$60,000 - \$80,000 in onboarding labor and productivity savings**
- **1 - 2% improvement in boiler efficiency** by minimizing unnecessary steam venting and improving operational practices approximately **\$182,000 annually in fuel savings**
- Reduced likelihood of costly operator-induced process upsets
- Enhanced workplace readiness for future digital transformation initiatives

Most importantly, operators now gain hands-on experience responding to high-consequence events before they occur in the real plant, improving reliability for a facility where uninterrupted steam service is essential.

READY TO TURN WORKFORCE TRANSITIONS INTO AN OPPORTUNITY?

What could your operation achieve if every operator could safely master critical scenarios before they happened in the plant?

Contact Us and Make A Change Today