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Power Plant Embraces Reliability to Improve Performance and Mitigate Aging Workforce Issues

The Situation

One of the largest consumer-operated, regional, joint-power supply ventures in the United States was operating in a constant state of reactivity. The plant, in operation since 1982, is made up of three coal-based, 570-megawatt units that deliver electricity to two separate electrical grids.

Coal power plants are under immense pressure to improve operational performance due to increasing regulations, rising costs, and continual loss of talented employees due to retirement.

The Challenges

After a plant-wide gap analysis was conducted, the leadership team realized current reactive practices would not support continued sustainability and future business goals. The power plant was experiencing numerous challenges:

- Poor union management labor relations
- Constant state of reactivity
- 30% of workforce retiring within five years and no formal knowledge transfer plan
- Inconsistent plant operation from crew to crew
- Work not scheduled – highly reactive
- Foremen stuck in office, not in the field
- Inadequate job planning and materials acquisition
- Underutilization of asset management system (Ventyx)
- Routinely over budget on major outages

The Approach

The leadership team looked for a partner to provide reliability and asset management expertise. LCE was chosen based on its track record helping other large power plants through an approach that includes educating the workforce on principles of reliability, hands-on coaching and implementation of risk-based asset management to support business goals and strategies.

The reliability effort kicked off with a formal assessment by LCE which identified gaps in performance and areas where the plant needed to improve. LCE provided change management training and coaching for all plant leaders and supervisors. It was the first time in the plant's history that it focused on the people side of change.

Focus teams were formed to lead improvements across four main target areas:

- Reliability Engineering
- Materials Management
- Work Management
- Operator Care

LCE provided subject matter experts to guide the teams and institute best-practices in each competency area. LCE deployed a full training program to equip employees with the skills needed to operate according to industry best-in-class practices.

The Results

The site is now equipped with processes based on industry best practices and asset management plans that are in alignment with business goals. Achievements accomplished to date include:

- A leadership team that understands the importance of leading proactively.
- Employees have been trained on best practices in the areas of proactive work management, reliability engineering, materials management, autonomous maintenance and change management.
- Implementation of manufacturing vending and dispensing machines and vendor-managed inventory has reduced warehouse window traffic for consumable items (safety glasses, gloves, batteries and other high-use items previously in the warehouse inventory).
- Revised inventory management practices to reduce inventory investment and storage practices.
 - Removal of obsolete items resulting in annual cost savings
 - Commodity grouping of inventory items
 - Secure laydown yard for project and large items
 - Increased storage capacity - vertical space utilization
- Maintenance proactively plans work to ensure safe and efficient work execution.
- Kits are created to ensure parts are onsite before the jobs are scheduled and labor deployed. Delivery of kits to the maintenance shops reduces travel time of the maintenance techs to the warehouse to get parts.
- A newly formed reliability engineering function utilizes risk-based asset management practices to effectively and efficiently manage assets and solve problems to root cause.

Conclusion

Plant-wide improvements have fostered a more proactive culture resulting in more satisfied employees. It has a solid plan for transferring the knowledge of retirees by utilizing Ventyx, the asset management system. The team has structured an environment of continuous improvement and is tracking success each day.

About LCE

Life Cycle Engineering (LCE) (www.LCE.com) provides consulting, engineering, applied technology and education solutions that deliver lasting results for private industry, the Department of Defense and other government organizations. The quality, expertise and dedication of our employees enable Life Cycle Engineering to serve as a trusted resource that helps people and organizations to achieve their full potential. Founded in 1976, LCE is headquartered in Charleston, South Carolina with offices across North America and experience around the globe.

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