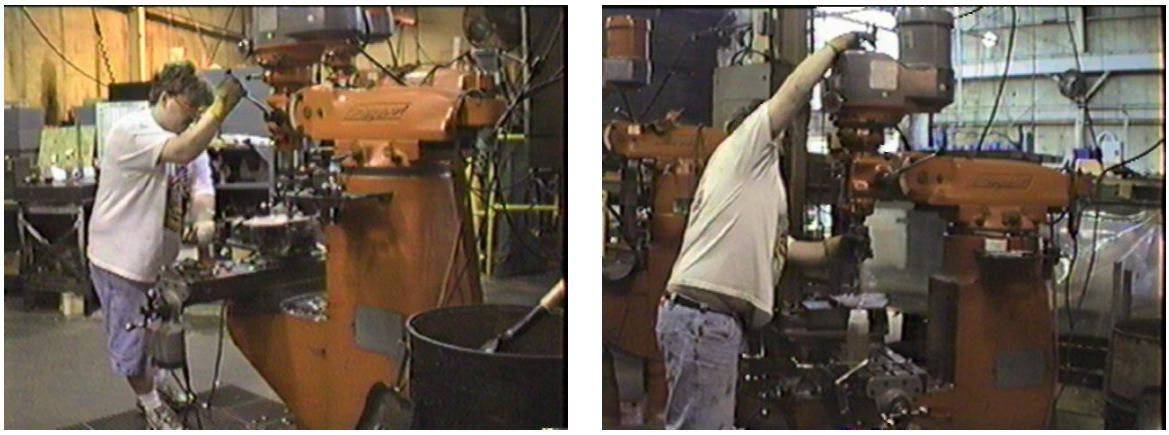
Joslyn Hi-Voltage Corporation, Cleveland

Intervention Key Words: CNC Machine, Automation
Industry: Manufacturing
Risk Factor(s): Repetitive motion, Awkward Posture- Back deviations, Shoulder deviations, Wrist deviations, High Hand Force- Pinching/Gripping, Vibration- Hand/Arm, Direct Mechanical Pressure

Situation:

Joslyn Hi-Voltage manufactures power transmission and distribution equipment for electric utilities. The company operates two lines at their facility in Cleveland, an assembly line and a machining/fabrication line. Current reorganization and growth has led Joslyn to redesign parts of the machining area into production cells rather than separate lines. These new "cells" have created some worry concerning Cumulative Trauma Disorders (CTDs) due to the unfamiliar work area, new equipment and the changes in material handling. Some of the concern stems from the tasks of milling, grinding, and buffing using manual milling machines. Risk factors such as forceful exertions, vibration, extreme reaches, awkward postures and repetitive motions are present in all of the tasks. Other risk factors arise from the necessity to transfer parts individually between stations rather than in bulk lots (previous method). Several employees experienced cumulative trauma disorders such as carpal tunnel syndrome and back injuries as a result of performing these tasks.



CTD risk factors in action

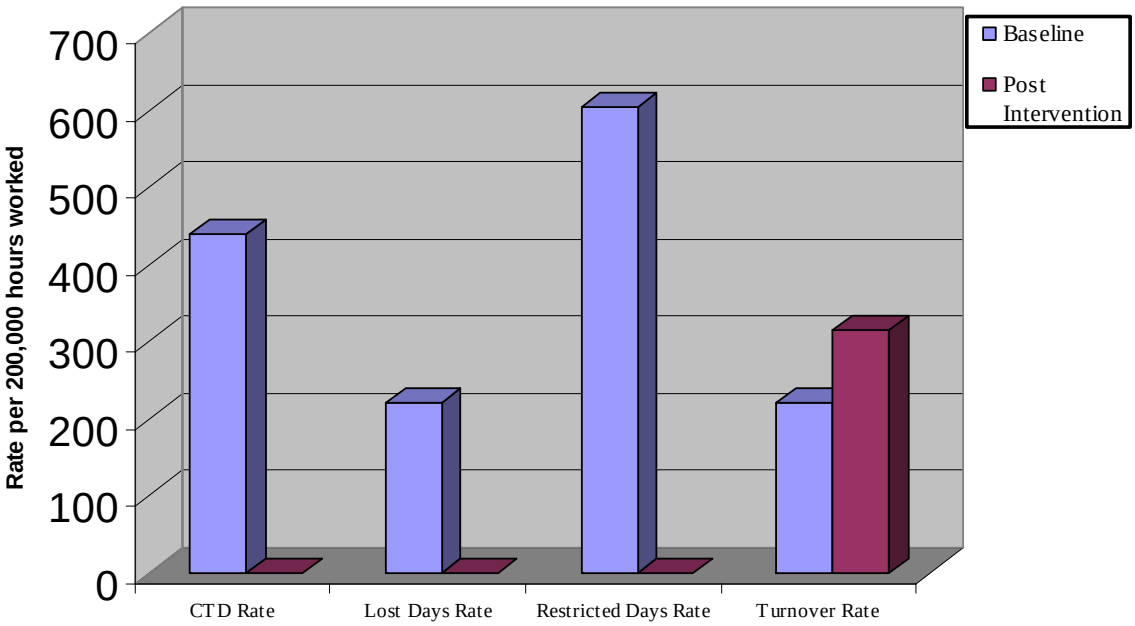
Solution:

Joslyn Hi-Voltage invested in a CNC milling machine to address their CTD concerns. Not only is the new machine completely automated, it can perform a number of tasks at once, reducing the number of times a part must be transferred between stations. Tasks such as milling, grinding and buffing can now be accomplished with an operator sitting behind a control panel supervising the work of the machine. The CNC device will automatically change tools and perform the next procedure. The CNC machine has not

only eliminated the ergonomic risk factors but has also increased the efficiency of the overall process. Other safety concerns are also remedied as the machine operates behind closed doors, eliminating hazards such as flying debris and coolant spills. Total cost for the intervention was $56,350. Joslyn Hi-Voltage received $40,000 in assistance from SafetyGrant$ to offset the costs.

CNC Milling Machine

Results:



- CTD Rate, Lost Days Rate and Restricted Days Rate (standardized per 200,000 hours worked) all decreases 100% from 440, 220 and 604 respectively in the 2 years following the intervention.
- An increase in Employee Turnover Rate was observed following the intervention but may not be directly attributed to it.
- CTD Risk Factor Scores decreased 72% following the intervention.