Sustaining a culture of reliability requires the use of many asset condition monitoring technologies, reliability engineering, knowledge training and a disciplined work execution management system. What holds the culture together and pushes Hibbing Taconite to achieve new levels of excellence is the leadership within the department and site upper management. With this support, the Reliability Department has been able to continually improve and drive a sustaining culture of reliability. Since the inception of the reliability program, Hibbing Taconite has shown a commitment to the growth of the program. Over the last decade, it has evolved from department specific to a centralized site effort. This change to a fully functional department has proven to be the game changer by developing synergies that generate sustainable bottom line results. The strong sponsorship by the site management and leadership team has given site reliability engineers the ability to develop strong competencies in asset management technologies. In turn, this top down reliability maintenance approach has also enhanced the development and training of our personnel who operate and provide maintenance on the floor. This has provided an environment to embed our site vision to all roles at the site.

An emphasis on predictive technologies provided the ability to monitor equipment performance against the P-F Curve and turn from a mostly reactive to a mostly proactive maintenance organization. Training in asset condition monitoring technologies and the continual development of reliability competencies is a standard practice. Reliability engineers receive training in vibration analysis, lubrication, oil analysis, and machinery alignment in the first year of the program. Engineers also are given opportunities to develop their social skills, maintenance process understanding, and leadership skills through engagement of our work force, training, and maintenance supervisors. The second year of the program furthers their development with training in infrared thermal imaging, non-destructive testing, and ultrasound training.

Following the first two years, engineers are then encouraged to seek more condition monitoring training to strengthen their skill sets. The emphasis on developing condition monitoring skills is not limited to just reliability engineers but also used to develop our craft work force as well. Personnel are given the opportunity to receive training in lubrication, alignment, and other precision maintenance techniques which help drive a culture of reliability across the site.

Preventive maintenance is a key metric monitored with in all departments. Reliability engineers perform thorough reviews of preventive maintenance targets and activities with all roles involved in the preventive maintenance process. Asset meetings are attended to get feedback on the performance of PM activities. The work force is engaged to probe for new ideas on how to gain more value in the process and also build ownership with equipment. Results are then brought back to our planners and schedulers so that they can also refine our maintenance process. After action reviews of PMs and major repairs are performed to gain open and honest feedback of the changes made.

Assets on the site are continually reviewed for opportunities to increase reliability through use of Cliffs Engineering Maintenance Tactics Process. Failure modes and effects analysis are performed with personnel from operating, maintenance, and asset management, with direct engagement of the day to day operators and maintainers. Gaps in our current strategy are identified and improved. The results of the process improve our ability to identify work accurately, increase equipment reliability, and enhance our throughput/availability/performance of the assets.

Reliability at Hibbing Taconite is not just a department. It is culture that seeks for continual improvement with not only our assets but with our work forces as well. The use of the condition monitoring tools along with reliability engineering for maintenance has a direct impact with work execution management which leads the site to operate at a high level of excellence. Hibbing Taconite Company firmly believes that through investment in our employees and their engagement in the improvement process, an effective maintenance and reliability team has been established; a team that uses a tried and true maintenance system to provide reliable equipment which ensures the safety of our employees, protects the environment, and meets the production needs of Hibbing Taconite Company.