

VelocityEHS Industrial Ergonomics: Uniting Engineers and EHS Team Members at First Solar



Headquartered in Tempe, Arizona, First Solar is a leader in sustainable solar energy. The company provides eco-efficient photovoltaic (PV) solutions, or solar panels, which generate energy at a competitive cost and with the smallest environmental impact. The people at First Solar are not only committed to addressing environmental matters, but they're committed to each other. This is why Michele Youngdale, who manages occupational health and ergonomics for North America, says First Solar is a great place to work.

Safety is the company's first core value. "We care about our people, and we care about what we do and how we do it. It's the key to our success in environment, health, and safety," says Youngdale. "When I started at First Solar, our approach to ergonomics was reactive. We responded to issues when they came up. Since we didn't have a well-defined ergonomics process, we set a goal to implement a more proactive approach," explains Youngdale.

The first step was to provide ergonomics training using VelocityEHS Industrial Ergonomics, a web-based ergonomics management and training tool for manufacturing and industrial environments. "After the team members completed the online training modules, we established an ergonomics team to work alongside certified professional ergonomists to conduct musculoskeletal disorder risk assessments on the shop floor. It wasn't until we brought engineering, EHS, and manufacturing supervisors together that I realized how differently they all viewed the work environment," says Youngdale. Each discipline focuses on different things: engineers focus on workstation design, EHS professionals are concerned with the worker's ability to perform job tasks (with little to no risk of injury), and plant supervisors oversee production and daily operations. Their combined experience and knowledge enabled them to set the following realistic goals for the next three years:

- 2016 – Complete job assessments and develop ergonomics improvement plans across global sites
- 2017 – Reduce risk by 20% using the Risk Reduction Index
- 2019 – Integrate the software into the ergonomics portion of the equipment design review process during retooling for the new Series 6 model

In 2016, First Solar implemented ergonomics training at two of its manufacturing sites: Perrysburg, Ohio, and Kulim, Malaysia. Ergonomics team members were required to complete online training modules, which introduced them to ergonomics principles and musculoskeletal disorders. They also learned how to identify jobs that pose a risk for injury and develop solutions to reduce that risk. This training engaged them in the process, empowered them to improve jobs, and drove them to achieve the established risk reduction goal in 2017.

The effort of creating a unified team with a clear focus is helping the company achieve its third-year goal: to integrate ergonomics design criteria into its workstation review process. The company replaced its Series 4 model (2-foot by 4-foot) solar panels, with the 4-foot by 6-foot Series 6 model. Due to the dimension change, its manufacturing line had to be completely redesigned; two-thirds of the Perrysburg plant was taken off line while equipment was removed and/or retooled. "The change in the product dimensions changed how we use VelocityEHS Industrial Ergonomics. We didn't want to fabricate new equipment, put associates in workstations, and hope for the best," explains Youngdale.

Design standards were then implemented: when a new piece of equipment comes into the plant, the ergonomics team members mock up a job scenario, complete a job assessment, and determine a risk score. The results drive the next steps: if the risk score is high, they go back to the drawing board, and if it is low (or there is no risk), both the engineer and the EHS team member approve the specifications prior to fabrication. "We are fortunate because our engineers are engaged in the process, work alongside our EHS staff, and are committed to improving the lives of our employees. VelocityEHS Industrial Ergonomics has really brought our disciplines together," says Youngdale.

The company plans to implement the software at its Vietnam plant in 2019 and 2020.

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