

Intermech Incorporated
Department of Energy Voluntary Protection Program Review
October 25-27, 2016

The Department of Energy (DOE) Office of Environment, Health, Safety and Security's (AU) Voluntary Protection Program (VPP) Team (Team) recommends that Intermech Incorporated (Intermech), a subcontractor to Bechtel National Incorporated (BNI) at the Waste Treatment Immobilization Plant (WTP), continue participation in DOE-VPP at the Star level.

Background

Intermech is a subcontractor to BNI, the prime contractor for the WTP construction project at DOE's Hanford Site in Washington State. Intermech initially achieved VPP Star status in the Washington State VPP program for its activities not associated with DOE. Subsequent to that achievement, Intermech applied to DOE-VPP in 2006, was awarded Star status in 2007, and recertified as a Star site in 2010 and 2013. This is the 3-year review for recertification as a Star site. The Team performed the onsite review October 25-27, 2016.

During the 2013 review, the Team found managers had a strong commitment to safety and to providing leadership and resources as well as a good relationship between the craft workers (crafts) and their managers. Equally important were worksite analyses processes and procedures, hazard prevention and control, and strong management commitment to safety and health training for managers, supervisors, and the workers. EMCOR Group Inc. acquired Intermech in 2011, but the acquisition has had no effect on the routine, day-to-day activities at the site.

BNI has focused its construction efforts primarily on the Low Activity Waste (LAW) building for the past 2 years. As a result, Intermech has reduced its craft workforce to one of its lowest levels since construction began. Intermech currently has 27 employees assigned to the WTP construction site. The purpose of this assessment was to determine if Intermech continues to meet the standard for DOE-VPP Star status. During the onsite review, the Team interviewed approximately 75 percent of the workers, supervisors and managers, and observed daily safety meetings and work activities. Specifically, the Team observed activities to remove and reinstall ventilation system ducting to accommodate design changes in the LAW building.

Results

Management Leadership

Awarded the DOE-VPP Star in 2007, Intermech has 9 years without a recordable injury. The manager and workers are proud of this achievement and none of the workers felt any pressure to underreport or hide injuries. Workers and managers alike felt that as long as they continue to work as a team the trend would continue.

Intermech managers remain committed to providing the leadership, direction, training, and resources for employees to perform their duties in a safe manner. The managers' support of the workforce was evident throughout the review. Managers continue to support the worker recognition programs and the safety group's recommendations for improvements (see Hazard Prevention and Control). Senior managers, as a team, evaluate the submittals to the employee

safety program. Managers continue to maintain a strong presence in the morning plan-of-the-day and safety meetings.

Intermech has moved all personnel from its intown office to the construction site. The move has improved the organization's efficiency. For example, the relocation of the engineers to the construction site has improved their ability to resolve issues quickly regarding design changes. The move has also improved managers' visibility and availability to the craft workers.

Intermech has continued the practice of hiring and promoting from within. For example, when the senior general foreman retired a few years ago, Intermech promoted a worker who had worked closely with the foreman for many years. As a result, the transition to the new position was seamless with little or no adverse effect on workers' expectations and the safety culture.

When a detailer (engineering drawing) position opened last year, managers filled that position with an experienced sheet metal worker who was in line for the next layoff. Intermech trained the individual to meet the requirements of the job, and he has been successful in his new role. In addition, Intermech has used the individual on two separate occasions when it needed an additional sheet metal worker for a job. The practice of hiring from within and retaining experienced workers while expanding their professional experience is a highly effective method to maintain Intermech's safety culture and employee trust.

Employee Involvement

Employee Involvement continues to be the foundation of Intermech's safety success. The interviewed employees were candid and showed a willingness to talk with the Team. All employees were knowledgeable of their rights and responsibilities regarding safety and health. In addition, all employees interviewed described the hazards present during the work activities and provided detailed responses when asked how the prescribed hazard controls applied to their work. Intermech continues to make improvements to its processes, procedures, and activities to enhance employee involvement and ownership of safety among the workforce. Workers continue to believe that Intermech is the safest place they have ever worked, while continuing to improve their safety practices.

As in 2013, employees feel that managers genuinely care for employees' safety, and employees are comfortable raising issues and concerns to managers without fear of reprisal. Employees continue to believe that managers remain responsive to employees' needs and concerns and continue to encourage open communication and feedback on all safety and health concerns. The communication observed at all levels, both during work activities and meetings, continues to be effective. Managers have instilled as a core value, that employee safety takes priority over production.

Intermech continues to support its six employee recognition programs with an annual budget of \$2,500. The six programs include the Safety/General Process Suggestion program, Safety/Quality Assurance (QA) On-the-Spot program, Weekly Safety/QA Trivia program, Quarterly Safety Slogan program, Quarterly Pizza Luncheon celebration, and the Children's Safety Poster contest.

Intermech procedure, WTP-ISH-009, *Safety Recognition Program*, describes the elements of the Safety Suggestion program. The Safety/General Process Suggestion program encourages all Intermech employees to submit in writing, suggestions related to safety and/or general process improvements. The Intermech Safety Committee reviews the suggestions and submits its recommendations to the management team for approval and award determination. Intermech recognizes the individual who submits the suggestion based on its value to the Intermech construction operations. The safety committee and management team also determine the top three annual safety suggestion awards with values of \$500, \$300, and \$200, respectively.

The Safety/QA On-the-Spot program allows managers to recognize individuals for doing something that surpasses Intermech requirements or expectations related to safety or QA. Workers may recommend other workers for On-the-Spot awards, but an Intermech manager must approve those recommendations. The On-the-Spot program is the most active recognition program at Intermech. On-the-Spot awards involve \$10 gift cards that the worker may apply to any number of prepaid cards offered by the company. The worker may accumulate On-the-Spot gift cards over time and request larger gift cards later.

The Weekly Safety/QA Trivia program involves a safety or QA question asked at each weekly safety meeting. Intermech tracks correct answers and awards a \$50 gift card at the end of each quarter to the employee with the most correct answers. The trivia program was the result of an employee suggestion in 2009 and has remained a staple of the Intermech recognition programs since that time. The trivia program reinforces the expectations and requirements related to QA and safety for the worker, and has been effective in reinforcing the understanding of those expectations for the workforce.

The Quarterly Safety Slogan program encourages the employees to submit a safety slogan each quarter related to Intermech's operations. Intermech posts the winning slogan for each quarter on company bulletin boards, and the employee who submitted the safety slogan receives a 20-point card or a \$20 gift card. Employees may accumulate point cards towards a larger gift card if preferred. Intermech selects an annual award from the winning slogans for all four quarters, and the winning employee receives a cash award.

Intermech initiated the Children's Safety Poster contest 8 years ago. Intermech employees' children, grandchildren, nieces, and nephews are eligible to submit safety-related drawings for each season for consideration. The winners receive a \$25 gift certificate, and Intermech displays the winning drawings as posters in the Intermech employees' areas onsite.

Due to the reductions in force, Intermech has reduced the safety committee team from eight to five members, including the management champion. Intermech workers select the safety committee members by secret ballot. Due to the low number of crafts, Intermech invites nonmanual workers to participate on the Safety Committee.

Interviews with crafts and management identified several safety suggestions recommended by the crafts which have been accepted and put into practice (see Hazard Prevention and Control).

Worksite Analysis

Intermech is contractually required to use BNI work control and hazard analysis processes. Intermech has continued to use these processes effectively to enhance its safety process.

Intermech employees and safety staff continue to work with the BNI safety group in order to continue to improve its hazard analysis and control processes. Intermech evaluates its work through the BNI automated job hazard analysis (AJHA) process. A set of previously developed AJHAs cover the majority of the Intermech work. The Intermech safety personnel and workers develop AJHAs using the activity hazard analysis process with a corresponding walkdown of the work activity.

In response to a 2013 opportunity for improvement, Intermech now includes references to any hazard analysis (sampling and monitoring) performed in support of a work package in the associated AJHA. The safety manager maintains the referenced analysis and can refer to that analysis if a similar work package occurs later on for comparison of controls.

As noted in the 2013 report, the Intermech safety lead, with support from the BNI certified industrial hygienist, continues to perform extensive personal sampling of workers involved in grinding and welding of stainless steel components during ductwork installation. In an effort to reduce costs, Intermech entered into an agreement with BNI to utilize BNI monitoring equipment for its sampling. This agreement removes the need and cost associated with Intermech procuring, maintaining, inspecting, and calibrating its own monitoring equipment. BNI monitoring equipment is readily available for the safety manager to use so the agreement has not resulted in any reduction of sampling activities.

As in 2013, the Intermech safety lead conducts multiple field safety inspections. These inspections include the weekly field safety inspection, the weekly site safety inspections conducted jointly by the Intermech safety lead and the BNI safety assurance officer, and the daily safety walkdown, which are documented in the safety lead's daily log.

Hazard Prevention and Control

The safety committee and the management team reviewed and accepted several employee suggestions that resulted in a number of improvements to hazard controls. The Team identified several examples where Intermech acquired personal protective equipment and tools to improve worker safety and health. For example, as the buildings come closer to completion, the welding activities occur in much tighter spaces. One worker suggested using a soft sock-welding hood with auto-dimming welding lenses, which would greatly improve their ability to work in the tight spaces. The welding hood is a tight fitting hood, which does not move while worn, and the auto-dimming welding glass eliminates the need to constantly lift and lower the hood lenses during welding operations, which is particularly advantageous in tight working spaces. Another worker suggested using an oscillating multi-tool for the removal of fire suppression materials from beams. Previously, tools typically required double hearing protection, hot work permit, and a fire watch. The use of the lower speed, oscillating multi-tool eliminates the hot work permit requirement and reduces the hearing protection requirement to single hearing protection. In

addition, the multi-tool uses the same amount of time for the removal operation as the previous tools.

Finally, a worker suggested procuring a portable, battery-operated band saw in lieu of the full size band saws and grinders currently in use for ducting hanger cutting. The newer tool is much lighter and more ergonomic to use and eliminates the need for hot work permits associated with grinder use.

Intermech employees are contractually required to operate under the BNI occupational medicine program (OM) and the BNI emergency management program. In support of the OM program, Intermech supervisors work in coordination with the occupational medical provider to develop an employee job task analysis for each worker's job description. Occupational monitoring is based on the job description and the recommendation from the occupational doctor.

Intermech employees participate in the BNI emergency management program through site-sponsored drills and the subsequent evaluations of those drills. The Safety Manager developed an internal Intermech accountability program for use during emergency management drills. Intermech houses employees in two separate trailers and the crafts are currently working onsite in the LAW building. The accountability program lists all employees and three responsible building wardens whose role in the event of an incident or drill, is to account for all personnel under their watch and report that information to the BNI emergency management lead. The process is more efficient than previous methods as the preassigned wardens are responsible for individuals located in their area.

Safety and Health Training

All Intermech employees are required to participate in the BNI site-required training programs. As discussed in the previous BNI/WTP VPP evaluation, the BNI training program was determined to meet the expectations of the VPP tenet. Per BNI procedure, BNI notifies the Intermech project superintendent via e-mail of upcoming training conducted by the BNI training group. The project superintendent is responsible for ensuring Intermech workers maintain their training.

Conclusions

Intermech maintains effective safety programs, and continues to pursue improvements through self-assessments and employee suggestions on safety and process improvements. Intermech uses a strong, proactive strategy to analyze and address potential hazards. Managers and employees continue to demonstrate an exemplary degree of teamwork which establishes safe production as a value. Intermech has institutionalized a culture of safety excellence and continuous improvement.

INJURY INCIDENCE/LOST WORKDAYS CASE RATE

Injury Incidence/Lost Workdays Case Rate Intermech					
Calendar Year	Hours Worked	Total Recordable Cases (TRC)	TRC Incidence Rate	DART* Cases	DART* Case Rate
2013	79,045	0	0	0	0
2014	75,672	0	0	0	0
2015	71,586	0	0	0	0
3-Year Total	226,303	0	0	0	0
Bureau of Labor Statistics (BLS-2014) **NAICS code 238220 Plumbing, Heating, and Air-Conditioning Contractors			4.9		2.8

* Days Away, Restricted or Transferred

** North American Industry Classification System

3-year TRC Incidence Rate: 0

3-year DART Case Rate: 0