



Burns & McDonnell - Facility Engineering Services, LLC/National Security Campus

**Report from the Department of Energy
Voluntary Protection Program
Onsite Review
November 5-9, 2018**



U.S. Department of Energy
Office of Environment, Health, Safety and Security
Office of Health and Safety
Office of Worker Safety and Health Assistance
Washington DC 20585

**Burns & McDonnell - Facility Engineering Services, LLC/
National Security Campus**
*Department of Energy Voluntary Protection Program Review
November 5-9, 2018*

Background

Burns & McDonnell - Facility Engineering Services, LLC (FES), is a subsidiary of Burns & McDonnell. FES is physically located in the National Security Campus (NSC) with Honeywell Federal Manufacturing & Technologies, LLC (Honeywell FM&T), and the National Nuclear Security Administration's Kansas City Field Office. There are approximately 26 FES employees with about 10 personnel from Burns & McDonnell that support FES. FES entered the Department of Energy's (DOE) Voluntary Protection Program (VPP) in 2006, and was recertified as a Star participant in 2008, 2012, and in 2015.

Honeywell FM&T assembles and manufactures components for national defense systems. These operations do not involve radioactive, explosive, or special nuclear materials. FES provides utility system management, engineering/design support, and construction oversight to Honeywell FM&T plant management operations. FES employees are primarily office workers that occasionally enter and evaluate plant areas. Potential hazards include physical hazards common to general industry: fires, electrical shocks, exposure to chemicals, and natural phenomena. FES employees are not part of a collective bargaining organization.

DOE has not conducted any reviews of FES in the past 3 years. FES has not reported any injury-related occurrences since 2011. FES did report a near-miss electrical shock through DOE's Occurrence Reporting and Processing System in 2017. FES has not had a recordable injury in the past 14 years and has not had a lost workday case in 16 years. In 2018, FES received a Legacy of Stars award for outstanding injury prevention, outreach, and mentoring.

Continued participation in DOE-VPP requires a triennial onsite review by the Office of Worker Safety and Health Assistance (AU-12), within the Office of Environment, Health, Safety and Security, to verify the safety programs, evaluate the participant's improvements from the last certification, and assure that FES continues to meet DOE-VPP requirements as specified in the DOE-VPP Manual. Personnel from the AU-12 Team (Team) interviewed all FES personnel, assessed FES project work areas, and evaluated FES' work control processes from November 5-9, 2018. This report documents the results of that review and provides the Associate Under Secretary for Environment, Health, Safety and Security with the Team's recommendation that FES continue to participate in DOE-VPP as a Star site.

Results

In the 2015 assessment, the Team concluded that FES was a small, tightly knit organization that was integrated into the NSC. It strove to ensure work could safely and effectively be performed and prevent unnecessary risks within the NSC. Although the FES VPP effort had stalled after the 2012 assessment, FES had revitalized its VPP steering committee. At the time of the last assessment, FES had a long history of working safely and routinely encouraged its workforce to

observe and intervene in potentially unsafe acts or conditions. FES also had several opportunities to stretch its safety efforts beyond just looking for unsafe acts or conditions and reenergize its pursuit of safety excellence.

FES offices are located in an open cubicle block within proximity of Honeywell FM&T. This promotes face-to-face communication between the two companies. This also allows for improved communication between FES employees and managers and gives employees the opportunity to speak directly to the small management team.

Based on input from the 2015 VPP review, FES managers moved away from the GEMBA Walk (derived from the Japanese term for real workplace) approach. GEMBA walk is a practice originated by Toyota Motor Corporation® and adopted by lean management systems. On a GEMBA walk, a manager goes to the workplace to understand the processes and issues experienced by workers and identify wasteful activities. FES rebranded the manager walkdowns to the “VPP Walkdown” to refocus the purpose of the walkdowns. The teams still consist of managers, VPP steering committee members, and the responsible project/construction manager or utility system engineer who perform monthly walks of FES activities and areas. The teams report any identified issues. During the “VPP Safety Walkdown,” managers interact with their employees and reinforce expectations for safety. The Team reviewed several “VPP Safety Walkdown” reports that described the work activity observed, the subcontractor and project information, and included photos documenting identified issues. While these walks improve manager visibility, identify issues, and reinforce safety expectations, the process is an informal practice. FES has not documented the “VPP Safety Walkdown” expectations, team structure, or schedule in any guide or process. FES should document the intent and function of the VPP Safety Walk Down program to ensure the viability, continuity, and continued success of the process.

<p>Opportunity for Improvement: FES should document the intent and function of the VPP Safety Walkdown program to ensure the viability, continuity, and continued success of the process.</p>
--

While FES performs several safety reviews of the FES-occupied administrative areas throughout the year, FES did not perform any specific safety and health evaluation of its workers’ administrative spaces (cubicles). FES managers recognized this weakness during the Team’s review and have scheduled quarterly workplace evaluations by the VPP committee. The process will include the FES-occupied spaces using a checklist. FES is revising the VPP charter guidelines to include these requirements. While the Team did not identify any worker safety hazards in the administrative areas, the quarterly inspections will increase the VPP Steering Committee’s visibility, improve communications, and potentially identify any new hazards that may develop in that area.

Managers are evaluating methods to ensure new personnel recognize and are familiar with the company’s expectations for the VPP safety culture. FES hired seven employees in the last 2 years to replace retiring employees. Managers recognized that the current FES training did not adequately emphasize the safety culture that retiring workers possessed. Training programs took

that culture for granted, and new employees lacked a basic understanding of the expected VPP safety culture.

FES managers attended regional and national Voluntary Protection Programs Participants' Association Inc. (VPPPA) conferences to identify and evaluate methods to improve new employee training and align new employees' understanding of the VPP safety culture with the company's expectations. FES is also considering strengthening its existing mentoring with senior staff and establishing limited "internships" for new employees with the VPP steering committee to improve new employees' understanding of those expectations.

In 2016, FES adopted Proctor and Gamble's behavior-based safety program Behavioral Observation System (BOS). The BOS program involves all FES employees and promotes positive reinforcement of safe work practices to eliminate unsafe behaviors during the observations. Selected FES employees perform jobsite observations during biweekly safety walkdowns and give observed personnel immediate feedback, both positive and negative. BOS schedules specific emphasis areas, but observers can make changes depending on the observed activities. Observers reinforce positive behavior with at least one individual during the safety walk. Observers point out any unsafe behaviors observed during the safety walk, and coach the individuals involved. Observers document all the behaviors noted and deliver the record to the FES BOS representative and the observed worker's contractor superintendent.

FES had trouble during the first year of the program ensuring employees performed observations when scheduled. Expectations for employee involvement were communicated and the BOS lead reminds employees of their scheduled BOS and their area of emphasis resulting in improved engagement.

FES provided examples where the process has successfully promoted safe behaviors. Construction contractor personnel and supervisors are receptive to the reinforcement of safe behaviors experienced during the observations. The BOS program has resulted in real improvements to the contractor safety programs. For example, during the scheduled Emergency Procedures Area of Emphasis BOS, the construction contractors were asked where their Chemical Sheltering, Tornado Sheltering, and Fire Evacuation locations were. The resulting discussions identified that the construction trailers had not been evaluated for sheltering events, and sheltering instructions had not been posted within the trailers. Honeywell FM&T Health, Safety, and Environment (HS&E) corrected those deficiencies. Without BOS, these deficiencies might never have been recognized and corrected.

FES uses Honeywell FM&T systems to plan and manage work by subcontractors as a contractual requirement. FES works very closely with Honeywell FM&T personnel to determine project requirements, budgets, schedules, and performs oversight of construction subcontractors. This integrated organization promotes communication and ownership. FES does conduct corporate activities independent of Honeywell FM&T, such as promotional activities and drawings for employee recognition.

FES continues to use the "Safety Interventions" (SI) recognition process with its employees. FES expects workers to perform and document SIs whenever they occur during their normal workday. These interventions document a worker-identified safety issue or condition. FES has encouraged its workers to also use the SI process at home. The Team reviewed numerous

examples of SIs that identified safety issues at home. Workers document and submit the SIs by e-mail to the designated SI lead. FES conducts regular monthly drawings for prizes, such as auto safety kits, family board games, and tools from submitted SIs. The first person drawn chooses a prize from the available pool; other participants have their choice of candy.

As a means of expanding employee participation and awareness of safety, FES sends monthly Safety Topic e-mails and hangs posters in the administrative office space every month. FES expanded the BOS program to include home safety observations in 2016. The VPP Steering Committee asked each employee to develop a home accident/emergency plan, severe weather safety plan, and fire emergency plan, and submit *Thankfulness Photos* for display at the company's holiday potluck breakfast. FES displayed posters supporting these safety themes in each cubicle bay, and the participants received prizes. FES had minimal participation in the safety plans initiative, so it discontinued the activity. In contrast, the *Thankfulness Photos* were extremely successful and FES continues that promotion. The VPP Steering Committee continues to pursue new ideas to engage the workforce and emphasize continuous improvement in safety.

In response to the 2015 assessment, members of the VPP Steering Committee said that they have become more self-critical in performing the annual assessments, and focus on specific, measurable, achievable, relevant, time-framed (SMART) goals. The VPP Steering Committee establishes those SMART goals using leading indicators, such as training, first aids, and SIs.

Interviews with the employees demonstrated that they recognized the importance of safety in the workplace. All the employees stated that they felt comfortable raising safety issues, stopping work, and reporting injuries. Additionally, many of the SIs raised safety concerns regarding subcontractors' activities at the NSC. FES employees had no concern or fear of retribution, even in raising concerns about another organization's activities. FES continues to have an employee representative on the Honeywell FM&T's "Safety 4 All" committee.

FES is a small organization and the VPP Steering Committee is actively pursuing new ideas to promote involvement and keep employees enthusiastic. Managers support employee attendance at the regional and National VPPPA conferences to encourage worker involvement and to identify additional methods to improve FES' safety culture. FES sends two employees per year to the VPPPA conferences, which is nearly 10 percent of its workforce, to increase exposure to new safety culture ideas and opportunities provided by the conferences.

A safety and health professional from Burns & McDonnell (FES' parent company) continues to perform ergonomic evaluations of all FES workstations. FES performs ergonomic evaluations on new employees' workstations and reevaluates current employees' workstations every 3 years to prevent deviations from the optimal setup.

As part of its mission to provide utility system management, engineering/design support, and construction oversight to Honeywell FM&T plant management operations, FES participates in Honeywell FM&T's preliminary hazard analysis (PHA) reviews that identify the potential effect of system or physical changes to the Honeywell FM&T's work environment. The Honeywell HS&E Process Description (PD) 5.12, *Enterprise Content Management*, describes the use of the PHA. A PHA is generally required for:

Procurement or new application of existing material or chemical; new business/work for others; construction/demolition projects; process modifications, or if reactivated after being idle for 5 or more years or procurement (new, borrowed, or leased) or transfer of equipment.

Honeywell FM&T's processes and work areas are dynamic, with relatively frequent changes to support different or new manufacturing processes. These changes frequently require modifying exhaust ventilation systems from process equipment. These modifications require careful management and balancing to ensure appropriate exhaust flows from all protected areas. To support this effort, FES coordinates modifications, performs ventilation configuration management, and maintains the Authorized Process Exhaust (APE) database. The APE database tracks ventilation modifications, process changes that cause different chemical use, and maintenance schedules. FES subject matter experts also use the Honeywell FM&T PHA process whenever exhaust ventilation is involved.

FES employees are encouraged to participate in the Burns & McDonnell Vitality[®] wellness incentive program. Vitality[®] participation requires three elements: complete the biometric screening; complete the Vitality Health Review; and complete Activities to Earn Points towards status discounts. The greater the number of points an employee earns in a calendar year, the greater the discounts that employee can receive from the health insurance premium. Workers can receive up to an \$80 discount on monthly medical insurance with an additional \$40 discount from their spouse's participation (on achievement of the required points). Workers also receive acute/urgent care, annual physicals, allergy shots, health coaching, and many other medical services at the Burns & McDonnell Health Center. Burns & McDonnell also maintains a fitness center that FES employees can use. The fitness center offers a variety of exercise equipment, classes, and an onsite fitness coordinator.

The 2015 assessment recommended that FES should consider sponsoring its construction managers to pursue the Board of Certified Safety Professionals' Safety Trained Supervisor for Construction (STSC[®]) certification due to its oversight role with Honeywell FM&T's subcontractor personnel. Many FES personnel are engaged in activities related to construction project management. In that role, FES personnel observe subcontractor personnel and can intervene and prevent unsafe practices. These individuals may not have safety as a primary duty, but their knowledge of safety standards and practices ensure safer worksites. Managers considered the recommendation and decided against the investment because they did not realize the difference between the STSC certification and a Certified Safety Professional. The Team pointed out to FES that the STSC is a lower certification, and is used extensively in the construction industry to help construction supervisors understand and implement safety requirements. Based on those discussions, FES is going to reconsider pursuing STSC certification or a similar training for its construction managers.

Training for FES employees emphasizes safety programs and provides knowledge to FES workers as they develop work control documents and review the work of contractors and subcontractors. Honeywell FM&T Facility and Safety requirements and Burns & McDonnell

corporate training requirements dictate FES employee training. All training requirements are approved by the FES managers. The FES training monitor maintains a training status for all employees.

Conclusions

FES is a small, family-like organization that is embedded in the NSC. In its support role to Honeywell FM&T, FES helps ensure work is performed safely by identifying hazards within the NSC and working with Honeywell FM&T to control those hazards. FES has a long history of contributing to the effort to perform work safely, and its BOS and SI programs successfully encourage its workforce to observe and intervene in potentially unsafe acts or conditions. The Team recommends that FES continue to participate in the DOE-VPP as a Star site.

Injury Incidence/Lost Workdays Case Rate (Facility Engineering Services)					
Calendar Year	Hours Worked	Total Recordable Cases (TRC)	TRC Incidence Rate per 200,000 hours	DART* Cases	DART* Case Rate per 200,000 hours
2016	93,293	0	0.00	0	0.00
2017	78,035	0	0.00	0	0.00
2018 [#]	50,743	0	0.00	0	0.00
3-Year Totals	222,071	0	0.00	0	0.00
Bureau of Labor Statistics (BLS-2016) average for NAICS** 56291 Waste Management and Remediation Services			4.2		2.7

* Days Away, Restricted, or Transferred

**North American Industry Classification System

[#]Data for 2018 is for 1st, 2nd, and 3rd quarter CY only

Discussion

FES has not experienced any recordable cases in the last 3 years. The Team reviewed the DOE Computerized Accident and Injury Reporting System (CAIRS) for the years 2015 to 2018. This review confirmed that FES had entered zero recordable cases into CAIRS and the work hours reported for those years closely matched the hours in its annual self-assessment VPP report. The Team did not find any evidence of underreporting, nor any evidence of disincentives or suppression of reporting. FES' average 3-year TRC case rate was 100 percent below the comparison industry rate, and the average 3-year case rate for DART was also 100 percent below the comparison industry rate.