Facility Engineering Services KCP, LLC

Report from the Department of Energy
Voluntary Protection Program
Onsite Review
September 10-14, 2012

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Foreword

The Department of Energy (DOE) recognizes that true excellence can be encouraged and guided but not standardized. For this reason, on January 26, 1994, the Department initiated the DOE Voluntary Protection Program (VPP) to encourage and recognize excellence in occupational safety and health protection. This program closely parallels the Occupational Safety and Health Administration (OSHA) VPP. Since its creation by OSHA in 1982 and DOE in 1994, VPP has demonstrated that cooperative action among Government, industry, and labor can achieve excellence in worker safety and health. The Office of Health, Safety and Security (HSS) assumed responsibility for DOE-VPP in October 2006. Assessments are now more performance-based and are enhancing the viability of the program. Furthermore, HSS is expanding complex-wide contractor participation and coordinating DOE-VPP efforts with other department functions and initiatives, such as Enforcement, Oversight, and the Integrated Safety Management System.

DOE-VPP outlines areas where DOE contractors and subcontractors can surpass compliance with DOE orders and OSHA standards. The program encourages a "stretch for excellence" through systematic approaches, which emphasize creative solutions through cooperative efforts by managers, employees, and DOE.

Requirements for DOE-VPP participation are based on comprehensive management systems with employees actively involved in assessing, preventing, and controlling the potential health and safety hazards at their sites. DOE-VPP is designed to apply to all contractors in the DOE complex and encompasses production facilities, laboratories, and various subcontractors and support organizations.

DOE contractors are not required to apply for participation in DOE-VPP. In keeping with OSHA and DOE-VPP philosophy, *participation is strictly voluntary*. Additionally, any participant may withdraw from the program at any time. DOE-VPP consists of three programs with names and functions similar to those in OSHA's VPP: Star, Merit, and Demonstration. The Star program is the core of DOE-VPP. This program is aimed at truly outstanding protectors of employee safety and health. The Merit program is a steppingstone for participants that have good safety and health programs, but need time and DOE guidance to achieve true Star status. The Demonstration program, expected to be used rarely, allows DOE to recognize achievements in unusual situations about which DOE needs to learn more before determining approval requirements for the Merit or Star program.

By approving an applicant for participation in DOE-VPP, DOE recognizes that the applicant exceeds the basic elements of ongoing, systematic protection of employees at the site. The symbols of this recognition provided by DOE are certificates of approval and the right to use flags showing the program in which the site is participating. The participant may also choose to use the DOE-VPP logo on letterhead or on award items for employee incentive programs.

This report summarizes the results from the evaluation of Facility Engineering Services, KCP, LLC, during the period of September 10-14, 2012, and provides the Chief Health, Safety and Security Officer with the necessary information to make the final decision regarding its continued participation in DOE-VPP.

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ABBREVIATIONS AND ACRONYMS

AHA	Activity Hazard Analysis
BLS	Bureau of Labor Statistics
BRF	Botts Road Facility
CI	Continuous Improvement
DART	Days Away, Restricted or Transferred
DOE	Department of Energy
ELMS	Electronic Learning Management System
FES	Facility Engineering Services KCP, LLC
FM&T	Honeywell Federal Manufacturing & Technologies
HSS	Office of Health, Safety and Security
KCP	Kansas City Plant
KCRIMS	Kansas City Responsive Infrastructure Manufacturing and Sourcing
KCSO	Kansas City Site Office
NAICS	North American Industry Classification System
NM	New Mexico
NNSA	National Nuclear Security Administration
OSHA	Occupational Safety and Health Administration
OST	Office of Secure Transportation
PD	Process Description
PPE	Personal Protective Equipment
SME	Subject Matter Expert
Team	Office of Health, Safety and Security DOE-VPP Team
TRC	Total Recordable Case
VPP	Voluntary Protection Program

EXECUTIVE SUMMARY

Facility Engineering Services, KCP, LLC (FES), a subsidiary of Burns & McDonnell Engineering Company, is located at the Bannister Federal Complex approximately 12 miles south of downtown Kansas City, Missouri. The Kansas City Plant (KCP) occupies approximately 141 acres of the 300-acre Bannister site. Honeywell Federal Manufacturing & Technologies (FM&T)/KCP operates and manages KCP for the Department of Energy's (DOE) National Nuclear Security Administration (NNSA).

FES is a subcontractor to FM&T/KCP, and provides engineering and design support for facility maintenance, construction and modification. FES is physically located in the KCP office building with FM&T/KCP and the DOE Kansas City Site Office.

In addition to KCP, several other federal agencies share the Bannister Federal Complex and include the Federal Aviation Administration; Defense Finance and Accounting Service; United States Marine Corps; General Services Administration; National Oceanic and Atmospheric Administration; and the National Logistics Support Center.

The mission at KCP is to assemble and manufacture components for national defense systems. KCP is responsible for the production and procurement of nonnuclear components for DOE's nuclear weapons program. Additionally, KCP supports the NNSA Office of Secure Transportation by building and refurbishing transport trailers. The operations directly involving radioactive materials or explosives normally associated with nuclear weapons do not occur at KCP nor does KCP store any special nuclear material.

DOE initially certified FES as a DOE-VPP Star site in 2006 and recertified FES in 2008. Continuation in DOE-VPP requires an onsite review by the DOE Office of Health, Safety and Security DOE-VPP Team (Team) approximately every 3 years. The Team conducted its review during September 10-14, 2012 to determine whether FES continues to perform at a level deserving DOE-VPP Star recognition. The Team identified 3 opportunities for improvement. These opportunities reflect areas where FES can further improve its performance. While no formal action plan is required to address these opportunities, FES should consider and specifically address them in its annual status reports.

This report documents the results of the Team's review and provides the Chief Health, Safety and Security Officer with the necessary information to make the final decision about the status of FES in DOE-VPP. The Team determined that FES has maintained a culture of safety excellence and achieved an exemplary degree of teamwork that firmly demonstrates its commitment to making safety a top priority in accomplishing its mission at KCP. Accordingly, having observed firsthand that FES continues to meet all VPP tenet expectations fully, the Team recommends that FES continue to participate in DOE-VPP as a Star participant.

TABLE 1

OPPORTUNITIES FOR IMPROVEMENT

Opportunity for Improvement	Page
Managers should try to increase their accessibility by becoming more visible in the employee workspaces and openly soliciting employee concerns.	**5**
FES should review the VPP Steering Committee's role and function and develop a charter to define its role and operation.	**6**
FES should evaluate additional tracking and trending opportunities such as training completion, near-miss tracking, and intervention participation at the FES level.	**9**

I. INTRODUCTION

The Department of Energy (DOE) Voluntary Protection Program (VPP) onsite review of Facility Engineering Services KCP, LLC (FES) was conducted September 10-14, 2012, at the Kansas City Plant (KCP). This is the second triennial recertification review conducted at FES.

The KCP is geographically situated on a 141 acre site in a 3.2 million square-foot facility located 12 miles south of the city center of Kansas City, Missouri at the Bannister Federal Complex. The mission at KCP is to assemble and manufacture components for national defense systems. A key element of the National Nuclear Security Administration's (NNSA) nuclear weapons complex, KCP is responsible for the production and procurement of nonnuclear components for the DOE nuclear weapons program. The parts produced and procured by KCP include: nonnuclear electric, electronic, electromechanical, mechanical, plastic, and nonfissionable metal components. Additionally, KCP supports the NNSA Office of Secure Transportation (OST) by building and refurbishing transport trailers, and provides line management for Honeywell Federal Manufacturing & Technologies (FM&T)/New Mexico (NM), which primarily supports NNSA OST. The DOE/NNSA Kansas City Site Office (KCSO) provides direction to, and oversight of, both FM&T/KCP and FM&T/NM.

In 2013, KCP will be moving to a new facility approximately 5 miles away on Botts Road. FM&T projects construction activities at the new facility will be completed by the end of 2012, with another year to complete the move.

FES is a subsidiary of Burns & McDonnell Engineering Company. FES is physically located in the KCP office building with FM&T/KCP and KCSO. There are approximately 46 FES employees and Burns & McDonnell support personnel who are directly contracted to FM&T to provide engineering/design support and oversight to FM&T/KCP.

Recertification in DOE-VPP requires an onsite review by the DOE Office of Health, Safety and Security (HSS) DOE-VPP Team (Team) to determine whether the contractor is still performing at a level deserving DOE-VPP recognition. The Team evaluated FES safety programs against the provisions of DOE-VPP. During the site visit, the Team observed work activities when possible, attended work planning meetings, evaluated relevant safety documents and procedures, and conducted interviews to assess the strength and effectiveness of FES' health and safety programs.

The Team had contact with 40 of the 46 FES managers, engineers, and support personnel, through formal interviews and observation of work activities. Although FES employees' job functions are primarily performed in offices, they do visit plant areas and may be exposed to the same hazards as FM&T workers. Potential hazards for FES employees during their duties in KCP include: physical hazards common to general industry, fire, electrical, chemicals, and natural phenomena. In addition, KCP has worked with, and continues to work with, beryllium-containing materials and nearly 1,000 workers at KCP are included in the DOE beryllium worker program.

II. INJURY INCIDENCE/LOST WORKDAYS CASE RATE

Injury Incidence/Lost Workdays Case Rate (FES)					
Calendar Year	Hours Worked	Total Recordable Cases (TRC)	TRC Incidence Rate	DART* Cases	DART* Case Rate
2009	56,405	0	0.00	0	0.00
2010	43,416	0	0.00	0	0.00
2011	81,221	0	0.00	0	0.00
Last 3 Years	181,042	0	0.00	0	0.00
Bureau of Labor Statistics (BLS-2011) average for NAICS** Code 54133 Engineering Services.			0.4		0.2

* Days Away, Restricted or Transferred
** North American Industry Classification System

TRC Incidence Rate: **0.00**
DART Case Rate: **0.00**

FES has completed 8 consecutive years without a reportable injury, and 9 of the past 10 years without a DART case. None of the personnel contacted by the Team indicated any hesitancy to report injuries, and FES did not have any systems that might discourage reporting by workers. FES personnel indicated that should an injury occur, they would report the event. The 3-year average is 100 percent below the comparison industry average, and clearly meets the expectations for participation in DOE-VPP.

III. MANAGEMENT LEADERSHIP

Management leadership is a key element of obtaining and sustaining an effective safety culture. The contractor must demonstrate senior-level management commitment to occupational safety and health in general and to meeting the requirements of DOE-VPP. Management systems for comprehensive planning must address health and safety requirements and initiatives. As with any other management system, authority and responsibility for employee health and safety must be integrated with the management system of the organization and must involve employees at all levels of the organization. Elements of that management system must include: (1) clearly communicated policies and goals; (2) clear definition and appropriate assignment of responsibility and authority; (3) adequate resources; (4) accountability for both managers and workers; and (5) finally, managers must be visible, accessible, and credible to employees.

In 2008, the review Team found that FES managers continued to regard the management of health, safety and environment as a core business value. This core value was evident throughout all levels of the Company through the positive feedback the Team received during the review. FES's commitment to safety showed no recordable injuries in the past 5 years.

The Facility Engineering Manager leads FES with 3 direct reports - a Utilities Engineering Manager, a Program Manager, and a Project Engineering Manager. In FES' organizational structure, the Utilities Engineering Manager manages utility engineers and maintenance planners, while the Program Manager is responsible for Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS), the Roof Asset Management Program, and program/ project controls. The Project Engineering Manager has responsibility for construction management, the project engineering group, cost engineering, designers, and project assistance activities. FES uses the human resources and training facilities available from its parent company, Burns & McDonnell for any additional support

FES, with extensive support from FM&T, maintains sufficient resources to support a safe work environment for its workers. Per the contract, FM&T provides necessary safety equipment and personal protective equipment (PPE) for FES employees. The employees indicated FES managers are very responsive in addressing their needs for equipment, tools, and PPE.

As identified in the 2008 review, health, safety and environment considerations are integrated into the FES planning processes, from top Company-wide strategic planning down through planning for each job. Annually, FES projects the safety and health resources it will need to support FM&T, and provides that projection to FM&T. This includes projections for safety equipment, PPE, and safety-related support for projects. FES managers stated that FM&T was always responsive to those projections, and resources have not been unduly limited.

The 2008 review found that FES managers are committed to maintaining a strong safety culture at FES. The FES Manager was visible in the workplace and employees believed they had access to him if needed. Employees interviewed indicated all managers led by example and strove to maintain the best working conditions for all employees. The Team did not observe any change in that commitment and leadership. The managers remain fully engaged on safety and health concerns or issues. The employees provided the Team with examples of how managers respond to safety and health issues or concerns (See Employee Involvement). After the 2008 review, managers instituted an intervention mechanism to foster a FES identity separate from the FM&T system and address the opportunity for improvement that suggested "…FES should be more

distinct from FM&T/KCP. FES should identify ways to enhance its current recognition program to include more than just meeting zero injury goals and include safe catches, implemented suggestions, and finding solutions to safety problems rather than relying too heavily on the Honeywell FM&T/KCP employee recognition program…" The Intervention Program is similar to the FM&T reporting system, and rewards FES employees for identifying unsafe conditions, correcting unsafe practices, or making safety suggestions to improve the work environment. The Engineering Manager indicated that employees initially showed a great response, but enthusiasm has waned recently due to production work reductions pending the move to the Botts Road Facility (BRF). The Engineering Manager expects more participation as the move gets underway and plant activity increases.

The safety and health program roles and responsibilities remain well-defined. FES either uses FM&T programmatic documents directly, or derives its own program based on FM&T programmatic documents. Managers define and document FES employee's roles and responsibilities in employee job descriptions. FES requires all employees to sign and date an "Agreement and Acknowledgement Statement" indicating that they have read and fully understand the Annual Safety and Health Plan and their individual responsibilities, and that they agree to abide by the provisions of the Plan. Although the FES discipline policy is in place, employees interviewed could not remember FES ever using it. The positive recognition through the Intervention Program and at the quarterly "All Hands Meetings" plays a key role in reinforcing safe behaviors expected of FES employees.

FES evaluates its safety and health program annually, and includes the DOE-VPP criteria in that evaluation. Identified issues result in unit-specific and facility-wide improvement action plans, and FES tracks all improvement actions to completion. The ultimate goal of the annual evaluation is continuous improvement of the safety and health program, systems, and processes. FES continues to utilize self-evaluations and the data gathered during evaluations to enhance its programs and drive feedback, improvement, and corrective actions.

FES notifies new employees of their safety and health rights during the new employee orientation. Several other mechanisms also communicate employees' rights to access information after the initial employment and site-specific orientation. For example, the FES Project Manager sends a weekly health and safety e-mail message to all FES employees. Managers encourage and reinforce employees' participation and suggestions to improve safety through a variety of promotional programs.

As identified in 2008, the KCRIMS project is still underway. This project involves design and construction of a new plant with a smaller footprint, as well as more efficient and flexible manufacturing processes. With the design and construction almost complete, further refinements will occur because of the move. NNSA expects the new facility to be ready for occupancy in the first quarter of calendar year 2013. The FES manager for KCRIMS is also the manager for coordinating the move to the new facility located at Botts Road. The project includes moving over 2,000 pieces of equipment to the new facility. Each piece of equipment has a packet of information indicating its hazards, any contamination issues such as beryllium, decontamination requirements, packaging and transport requirements, and its location in the new facility.

The FES vision is to "achieve excellence in quality facility management and engineering." That vision includes a management team that values and actively supports safety. Managers communicate their expectations to employees in staff meetings, newsletters, and via e-mails.

One of the challenges facing FES managers in implementing that vision is the engineers and maintenance planners that will remain at the Bannister complex after the upcoming move to maintain the plant. FES hopes that the Bannister complex will be leased or purchased and those support personnel will be transferred to the new occupant and continue to support maintenance and utility activities. The Team interviewed several engineers that were remaining at the Bannister complex and their attitudes and professional commitment was outstanding. Despite the concerns over the move and job security, everyone stated that no matter the final result, the expectation for doing work safely is still their job. Although the managers' presence in the workplace is good, FES managers can further reduce workers' uncertainty associated with the move and more effectively communicate with their employees by more frequent interaction with all employees in their workspace.

Opportunity for Improvement: Managers should try to increase their accessibility by becoming more visible in the employee workspaces and openly soliciting employee concerns.

Conclusion

FES managers demonstrated the leadership and commitment necessary to pursue safety excellence. They support a work environment that encourages continuous improvement, provides necessary resources to implement new ideas, and employ management systems for worker safety and health. FES managers have an opportunity to increase their visibility and support through more frequent presence in employee workspaces. FES meets the expectations of Management Leadership for participation in DOE-VPP at the Star level.

IV. EMPLOYEE INVOLVEMENT

Employees at all levels must continue to be involved in the structure and operation of the safety and health program and in decisions that affect employee health and safety. Employee involvement is a major pillar of a strong safety culture. Employee participation is in addition to the individual right to notify appropriate managers of hazardous conditions and practices. Managers and employees must work together to establish an environment of trust where employees understand that their participation adds value, is crucial, and welcome. Managers must be proactive in recognizing, encouraging, facilitating, and rewarding workers for their participation and contributions. Both employees and managers must communicate effectively and collaboratively participate in open forums to discuss continuing improvements, recognize and resolve issues, and learn from their experiences.

FES employees interviewed during this assessment expressed a great deal of pride in their work supporting KCP. They firmly believed in the FES managers' commitment to a safe and healthy workplace. Employees understood their roles and responsibilities in the safety and health program and their ability to ask questions, raise safety concerns, and stop work if necessary. They firmly believe that if they identified a safer way to accomplish a task, they will receive management support in evaluating the improvement. All employees interviewed understood their responsibility to stop work if an unsafe condition arose, and mentioned no fear of retribution. All workers contacted by the Team expressed their willingness to help coworkers and prevent unsafe or at-risk behaviors. The workers stated that they are proud of their safety record and the value of safety in their lives, both at work and at home.

FES has a VPP Steering Committee that meets quarterly. The FES Manager is the chairman, with participation by FES department managers, and 4 other FES employees. The Team held discussions with employees and managers which indicated that the original emphasis of the committee may have eroded with time and a reevaluation of its function might reenergize its contribution to the organization. Further, the committee might be more effective in stimulating employee participation if it were employee-managed, with a charter developed to define its role and function.

Opportunity for Improvement: FES should review the VPP Steering Committee's role and function and develop a charter to define its role and operation.

Several FES employees participate on the FM&T safety committee. They bring the engineering perspective and contribution to issues identified across the plant and help correct or mitigate deficiencies. Suggestions to improve a process or modify the plant for safety considerations are also part of the FES support to KCP. As an example, FM&T employees at the Bannister complex power plant needed a safer way to change overhead lights. FES employees designed a metal man-basket lifted by an overhead crane to reach the lights. In addition to the enclosure, engineers included escape provisions that allowed the occupant to egress safely if the crane lost power. The man-basket also includes a redundant set of crane controls for the occupant in case the controls from the floor operator fail.

FES engineers have designed several unsolicited improvements into the Bannister complex power plant operations during the past 3 years. For example, workers previously loaded

50-pound bags of bulk water softener from a pallet on the floor. This required the worker to bend over, lift the bag, position the bag over the floor chute, cut the bag, empty it, and then repeat the process for a pallet of 25 bags. FES designed a metal chute with a shelf, approximately 3 feet in height such that a forklift could position the pallet next to the metal shelf, the worker could slide (not lift) the top bags to the edge of the shelf, cut open the bag, and empty the bag onto the chute that ran into the floor opening. This new approach greatly reduced the potential for back injuries. In another case at the Bannister complex power plant, FES personnel evaluated the delivery and addition of liquid cooling water chemicals. Previously, operators donned PPE (rubber apron, chemical-resistant gloves, and face shields) to hook up 40-pound (5 gallon) containers to pumps and feeders then rinse out the used containers. FES designed a bulk feeder system located outside the power plant building that gravity feeds three 500-gallon tanks. The location of the system allows bulk trucks to connect to the piping and transfer the needed chemicals directly to the tanks located in the basement of the power plant. FES analyzed the potential for upsets and improper connections and concluded that there were no chemical compatibility issues or issues with spill-containment. The new system for delivery eliminated the physical exertion and chemical exposure potentials for FM&T operators, and substituted effective engineered controls for PPE.

Other suggestions that FES employees have contributed to a safer operation include using riser flags on the roof in the winter. These marker flags are attached to risers so that when it snows, workers performing maintenance or making modifications will not trip on roof risers that may be hidden by snow. FES developed a chemical tracking system for the Bannister complex that tracks the location and quantity of different chemicals used in the manufacturing processes. This tracking system is part of the pending move to BRF from the Bannister Complex to help identify potential hazards associated with moving partially used chemicals or unused chemicals associated with manufacturing. Once a chemical is moved to its final location, the inventory is not updated if the chemical is only partially used. Users cannot currently identify partially-used and unneeded chemicals elsewhere in the plant. As a future enhancement, FES should add the capability for users to identify partially-used quantities to reduce purchase and disposal costs.

Further examples of employee involvement at FES include FES employees and their families participating in the design of the FES 2012 safety calendar with safety pictures provided by their children. FES employees participate in the Company-sponsored fitness and wellness program. Many employees informed the Team that the safety lessons learned at KCP are also used at home. The FES Intervention Program recognizes FES employees for identifying potential safety issues or peer-to-peer intervention if a safety concern arises. The Intervention Program collects submittals for the month and a drawing is held for a monthly prize. This process rewards participants, through a monthly drawing, for participating in a positive activity to improve the safety of the worker or workspace. All employees indicated their awareness of the Intervention Program. Two employees indicated they had used it but that they preferred to verbally inform their safety contact because it was easier. Overall, FES provides many effective means for Employee Involvement.

Conclusion

FES employees have multiple avenues to participate in the safety and health programs. They demonstrate their ownership of their safety and that of their coworkers by participating in the FES Intervention Program, and by communicating with their safety contacts. FES employees

have suggested numerous safety improvements at KCP that were implemented. FES meets the expectations in Employee Involvement tenet for continued participation in DOE-VPP.

V. WORKSITE ANALYSIS

Management of health and safety programs must begin with a thorough understanding of all hazards that might be encountered during the course of work and the ability to recognize and correct new hazards. There must be a systematic approach to identifying and analyzing all hazards encountered during the course of work, and the results of the analysis must be used in subsequent work planning efforts. Effective safety programs also integrate feedback from workers regarding additional hazards that are encountered and include a system to ensure that new or newly recognized hazards are properly addressed. Successful worksite analysis also involves implementing preventive and/or mitigating measures during work planning to anticipate and minimize the impact of such hazards.

During worksite visits, FES relies heavily upon the hazard analyses performed by FM&T using the FM&T Process Description (PD) 6.55, *Maintenance of Equipment and Facilities*. For work activities within KCP Bannister complex, FES engineers support FM&T by participating in hazard identification and mitigation whether it is a FM&T or FES work activity. Participation may include identification of hazards and control or review of the work package to ensure all hazards and controls are considered.

Two principal areas within FES are subject to evaluation of workplace hazards: the office environment; and the maintenance, construction, or modification environments. The office environment is subject to periodic safety inspections. The safety and health staff perform these inspections and may include division managers or the FES Manager. These inspections may address specific topics, such as the use of extension cords, heaters, tripping hazards, egress requirements, potential ergonomic issues, and housekeeping. All employees receive information about the importance of correct ergonomic design in the workspace and are encouraged to inform either their managers or the Safety Advocate of any concerns or questions regarding ergonomics. FES provides all employees an opportunity to have their workspace evaluated, and most FES employees have had an ergonomic evaluation.

The second area evaluated for hazards are outside the office environment where maintenance, construction, or facility modifications are occurring. Before any project or work starts under the direction of FES, a packet of information is prepared to support the evaluation of expected hazards. FES employees work with the construction and maintenance organization to ensure that each project has engineering support as required. During the planning process, FES employees review the project site to identify safety and health issues. FES uses the FM&T Activity Hazard Analysis (AHA) process to document hazards, the analysis, and appropriate controls for the execution or work. Other tools available to planners include: a Preliminary Hazard Analysis, a list of Unique Site Hazards, a daily hazards analysis form that documents any changes from day-to-day, and the Work Order Project Checklist. As an example, the FES subject matter expert (SME) for electrical utilities writes individual high-voltage maintenance procedures for FM&T. These maintenance documents are step-by-step procedures dictated by the nature of the hazard. The process for developing the procedure requires the SME to evaluate each step for potential hazards and propose controls for mitigating or eliminating the threat. After a draft has been developed, the workers, the SME, safety professionals, and managers sit together and go over the steps to ensure they have identified, analyzed, and documented all the hazards and identified appropriate controls. Additionally, the SME is always at the jobsite during these evolutions to

provide assistance during the performance of work. FES also provides an SME review for FM&T on AHAs developed for periodic maintenance, construction projects, and corrective maintenance.

FES tracks and trends project information such as project costs, hours, and completion schedule. When asked about tracking health and safety statistics, FES' believes its exemplary record speaks for itself. FES managers may want to consider finding other leading indicators related to health and safety. As previously discussed, managers believed participation in the Intervention Program had fallen off, but did not have any statistics to support that belief. Other near-misses are reported to FM&T, but FES does not track its own statistics. FES collects information in training records, but does not regularly review that information for trends or statistical performance data. FES may benefit from tracking training information, near-miss information, and intervention participation at the FES level as leading safety indicators, in addition to the reports provided to FM&T.

Opportunity for Improvement: FES should evaluate additional tracking and trending opportunities such as training completion, near-miss tracking, and intervention participation at the FES level.

As identified in 2008, FES does not conduct independent accident investigations. However, FES does participate in the FM&T process to investigate occurrences. The FES Health and Safety Plan specifies the actions required for any accident involving an FES employee. The FES organization reports near-misses and incidents on an incident form and forwards this information to the FM&T health and safety organization, which coordinates the appropriate accident investigation. Employees know how and when to use the form and are given information regarding other incidents and near-misses. FM&T requires injuries to be reported to the FM&T health safety and environment department immediately. The FES manager, or designated management representative if the FES Manager is unavailable, completes an accident report form for each accident at KCP involving FES personnel. The FES manager or representative submits a copy of the completed form to FM&T, the project file, and the FES human resources specialist. FM&T conducts the investigation with FES support and communicates the findings to the injured employee though the FES Manager or designated representative.

Conclusion

FES has adequate worksite analysis processes and procedures in place that address the hazards encountered at KCP. Worksite analysis methods are effective in addressing both existing and new hazards. The Team noted a highly professional and disciplined practice of hazard recognition in all areas that fully supports the program of worksite hazard management. FES meets the expectations of the Worksite Analysis tenet for continued participation in DOE-VPP.

VI. HAZARD PREVENTION AND CONTROL

Once hazards have been identified and analyzed, they must be eliminated (by substitution or changing work methods) or addressed by the implementation of effective controls (engineered controls, administrative controls, or PPE). Equipment maintenance processes to ensure compliance with requirements and emergency preparedness must also be implemented where necessary. Safety rules and work procedures must be developed, communicated, and understood by supervisors and employees. These rules/procedures must also be followed by everyone in the workplace to prevent mishaps or control their frequency/severity. Where hazards cannot be eliminated, they are mitigated through the appropriate use of controls in a hierarchical approach, first engineered controls, then administrative controls, and/or use of PPE.

As identified in the 2008 review, FM&T institutionalizes the hierarchy of controls (elimination or substitution, then engineered controls, followed by administrative controls, and PPE) that protects workers outside of the office spaces occupied by FES employees. FES engineers and SMEs use the hierarchy to ensure appropriate measures control hazards. With the move to a new facility imminent, there is a potential to minimize the importance of the control hierarchy in order to expedite work. FES is aware of this potential, and the Team did not observe any situation where control selection was misapplied.

FES attends the FM&T daily Honeywell Operating System Tier 1 through Tier 3 meetings. These meetings facilitate communication up and down the organizational structure such that the right people get the information needed to make good decisions. The Tier 1 meetings occur at the work locations. Tier 2 meetings include the section manager and the first line supervisors. Finally, Tier 3 meetings include the Director and section managers. Every day before works starts in every work group location, the Tier 1 meeting addresses the following questions:

- Are there any safety/security issues, concerns, or messages that need to be communicated today?
- Are there any safety interventions to report?
- Are there any significant quality issues?
- Are there any potential misses to current delivery requirements?
- What is each operator's primary job assignment, what is the due date or expected output for the operations you are currently working on, and when will they be completed?
- Are there any issues preventing you from performing your job today?
- Is there any equipment going down in the next 7 days for planned maintenance that may impact production, and when will it be available for production?
- Are there any equipment problems that resulted in unplanned downtime? If so, what was the impact to production?
- Are there any equipment problems that resulted in unplanned downtime? If so, what was the impact to production?
- Are there any new Continuous Improvement (CI) opportunities identified or change in status of open CIs?
- Is any help needed to close open CIs? and ;
- Are all cell metrics being reviewed at least once per week in the daily meeting?

The Tier 2 meeting also addresses the same questions. This process has significantly improved transfer of information up and down the management chain. There is active engagement by

workers and managers during these daily meetings. If an issue cannot be addressed at one level, it is quickly elevated such that resources can be allocated and corrective actions implemented.

Since the 2008 review, there has been no change in the FES medical program. The program provided by FM&T and Burns & McDonnell remains comprehensive and includes such aspects as preplacement physicals as needed and periodic physicals for employees who are exposed to jobsite hazards. A few employees are respirator qualified and receive appropriate annual physicals. The medical staff, from the physicians through the technicians, is highly qualified and able to respond to any medical emergency. Medical facilities provided by FM&T are strategically located to provide rapid and effective response. FES' parent company, Burns & McDonnell, provides annual physicals, respirator fit testing, and new-hire physicals for FES employees.

The Employee Handbook is available to every employee and clearly spells out the disciplinary policy. Disciplinary actions range from verbal instructions for nonserious violations up to time off or dismissal for serious violations. FES provides employees with its Safety and Health Plan and Contractor Safety Handbook that discuss PPE requirements. FES employees can obtain PPE from FM&T or Burns & McDonnell equipment dispensaries at no cost to the employee. FES also provides prescription eyewear and safety boots to its employees. No significant changes to the PPE program have occurred since the initial DOE-VPP certification in 2006.

The Team did not observe any emergency drills or emergency response activities during this assessment. Emergency contact numbers and instructions are contained in the Contractor Safety Handbook. The hotline for reporting spills or leaks is 7745 (SPIL) which is posted in appropriate areas. Fixed fire protection systems are in place, and pull boxes and fire extinguishers are clearly marked. A FES fire protection engineer is the SME for the KCP Bannister complex. All personnel interviewed by the Team had participated in a severe weather and chemical spill drill. Prior to the Team's arrival, an actual severe weather event occurred at Kansas City, where a tornado was sighted within a few miles of the plant. All personnel took the appropriate actions, demonstrating the effectiveness of their training.

FES continues to promote the use of ice cleats to prevent slips and falls in winter conditions. FM&T provides ice cleats to prevent slips while working on the roof during icy conditions. FES and FM&T employees also use the ice cleats during icy conditions on their morning walks from the parking lot to the office or jobsites or as needed under these same conditions throughout the workday. In addition, as previously mentioned in the Employee Involvement section, FES employees place flags on roof risers to warn workers of tripping hazards should the depth of snow cover the riser.

Conclusion

FES continues to have processes and procedures in place to mitigate hazards, minimize employee exposure, and meet the requirements of the Hazard Prevention and Control tenet. FES applies the hierarchy of controls to eliminate or mitigate worker exposures to hazards. FES employees use FM&T and Burns and McDonnell medical resources for physicals, mask fits, and immediate care. The emergency response procedures are in place and drills occur with FES participation. FES meets the Hazard Prevention and Control tenet for continued participation in DOE-VPP.

VII. SAFETY AND HEALTH TRAINING

Managers, supervisors, and employees must know and understand the policies, rules, and procedures established to prevent exposure to hazards. Training for health and safety must ensure that responsibilities are understood, personnel recognize hazards they may encounter, and they are capable of acting in accordance with management expectations and approved procedures.

FES employees receive training both onsite and offsite to meet job-specific knowledge requirements. Most of the onsite training is computer- based. Examples of computer-based training include: Bloodborne pathogen awareness, FM&T Safety Orientation, First Aid, General Awareness Overview for Beryllium Hazards and Controls, and Safe Attitudes for Everyone this Year. Offsite or classroom training examples include: American Society of Heating and Refrigeration Engineers Society meetings; Fall Protection; Hazardous Waste Operations and Emergency Response (HAZWOPER) 8-hour refresher courses; Machine Safety Seminar; National Electrical Code Workshop; and Society of Fire Protection Engineers meetings. All FES employees take the Occupational Safety and Health Administration's 10-hour Construction Safety Course.

FES uses a rigorous process to identify required training courses to meet legal and performance standards. Employees and their supervisors evaluate employees' training needs annually, and adjust the course/curriculum accordingly. FES evaluates engineers for core requirements and maintenance of professional credentials by discipline. Employees interviewed by the Team commented that training courses are effective in building safety performance and maintaining knowledge to perform their job function. As noted in the 2008 review, associates continue to accept their training requirements and convey an appreciation that their training provides the knowledge and skills to perform their jobs safely.

FES managers and supervisors attend the same safety and health courses as the employees. Additionally, they take courses for improving supervisory skills and regularly review the "lessons learned" communications generated by FM&T. FM&T maintains the FES training records in the Electronic Learning Management System (ELMS). ELMS generates notices for the employee-required training/refresher and sends an e-mail to the employee, the training coordinator, and the supervisor. If the employee fails to take the training, the supervisor reminds the employee. Failure to take the required training and respond to the supervisor's reminder may lead to disciplinary action, including termination and denial of entry to KCP by security. This process ensures that employees are always current on their training and refresher training requirements. FES collects information in training records, but does not regularly review that information for trends or statistical performance data. FES may benefit from tracking training information at the FES level in addition to the reports provided to FM&T.

Conclusion

Safety and health training provides FES with highly qualified and knowledgeable engineers and workers. FES employees, supervisors, and managers receive training commensurate with their level of responsibility. All personnel understand the hazards that might be present in their workplace and are capable of implementing the necessary controls to address those hazards in a safe and efficient manner. FES meets the expectations of the Safety and Health Training tenet for continued participation in DOE-VPP.

VIII. CONCLUSIONS

FES continues to implement a sound, effective worker safety and health program. Employees, supervisors, and managers have formed a relationship built on trust, communication, and professional respect in their support to FM&T. Managers actively encourage employees to participate in the safety initiatives, submit improvement ideas, and be vigilant for safety improvements. FES employees have repeatedly demonstrated their concern for safety by submitting safety ideas. FES employees assist FM&T with hazard analysis and control selection on a daily basis. Safety training for all personnel is appropriate, and ensures they are prepared to recognize and control the hazards they may face in day-to-day activities. FES continues to demonstrate its commitment to excellence and continuous improvement, and the Team recommends that FES continue in DOE-VPP as a Star participant.

Appendix A

Onsite VPP Assessment Team Roster

Management

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