West Valley Environmental Services LLC
West Valley Demonstration Project Contractor

Report from the Department of Energy
Voluntary Protection Program
Onsite Review
June 16-27, 2008

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

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) Voluntary Protection Program (VPP). Since its creation by OSHA in 1982, and by DOE in 1994, VPP programs have demonstrated that cooperative action among Government, industry, and labor can achieve excellence in worker safety and health. As part of a major DOE reorganization, the Office of Health, Safety and Security assumed responsibility for DOE-VPP in October 2006.

DOE-VPP outlines areas where DOE contractors and subcontractors can surpass mere compliance with DOE orders and OSHA standards. The program encourages the creative "stretch for excellence" through systematic approaches involving everyone in the contractor or subcontractor workforce at DOE sites. DOE-VPP emphasizes 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, research and development operations, and various subcontractors and support organizations.

DOE contractors are not required to apply for participation in DOE-VPP. In keeping with DOE's 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 contractors and subcontractors that have good safety and health programs, but need time and DOE guidance to achieve true Star status. The Demonstration program is expected to be used rarely; it exists to allow DOE to recognize achievements in unusual situations about which DOE needs to learn more before determining approval requirements for the Star program.

By approving an applicant for participation in DOE-VPP, DOE recognizes that the applicant is meeting, at a minimum, 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. DOE will provide the opportunity for contractors to work cooperatively with the Agency to resolve health and safety problems. Each approved site will have a designated DOE staff person to handle information and assistance requests from DOE contractors.

This report summarizes the team's findings from the evaluation of West Valley Environmental Services, LLC (WVES), activities at the West Valley Demonstration Project during the period of June 16-27, 2008, and provides the Chief Health, Safety and Security Officer with the necessary information to make the final decision regarding WVES' continued participation in DOE-VPP as a Star site.

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

AED	Automated External Defibrillator
ALARA	As Low As Reasonably Achievable
BLS	Bureau of Labor Statistics
DART	Days Away, Restricted or Transferred
D&D	Decontamination and Decommissioning
DOE	Department of Energy
ECC	Environmental Chemical Corporation
ESH&Q	Environmental, Safety Health and Quality Assurance
HCS	Hazard Controls Specialist
HLW	High-Level Waste
HRA	High Radiation Area
HSS	Office of Health, Safety and Security
IH	Industrial Hygiene
IR	Issue Report
ISMS	Integrated Safety Management System
LXA	Lower Extraction Aisle
M&O	Management and Operating
MSDS	Material Safety Data Sheet
NAICS	North American Industry Classification System
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Administration
PFP	Plutonium Finishing Plant
PM	Preventive Maintenance
PPE	Personal Protective Equipment
RHWF	Remote Handled Waste Facility
RWP	Radiation Work Permit
STS	Safety Trained Supervisor
TRMS	Training Records Management System
VPP	Voluntary Protection Program
VPPPA	Voluntary Protection Program Participants' Association
WRG	Work Review Group
WV	West Valley
WVDP	West Valley Demonstration Project
WVES	West Valley Environmental Services, LLC
WVNSCO	West Valley Nuclear Services Company

EXECUTIVE SUMMARY

The Western New York Nuclear Service Center is comprised of approximately 3,300 acres, approximately 35 miles south of Buffalo, New York. The site, managed by the New York State Energy Research and Development Authority on behalf of the State of New York, was the home of the Nation's only commercial nuclear fuel reprocessing facility. Approximately 600 metric tons of radioactive nuclear reactor fuel was reprocessed at the West Valley (WV) facility between 1966 and 1972. In addition to the reusable uranium and plutonium that was extracted from the fuel and shipped offsite, approximately 660,000 gallons of highly radioactive liquid waste byproduct was produced and placed in underground storage tanks at the WV facility.

In 1980, Congress passed and President Jimmy Carter signed The West Valley Demonstration Project (WVDP) Act, Public Law 96-368. Key elements of the Act include solidification of the high-level radioactive waste that resulted from nuclear fuel reprocessing and decontamination and decommissioning (D&D) of the facilities used in conjunction with the Project. High-level waste solidification was completed in 2002. Work at the WV site is now concentrated on a Cost Plus Award Fee contract awarded in June 2007, which is focused on contaminated facility decontamination, deactivation and demolition, noncontaminated facility disposition, waste management, operation and maintenance of facilities and infrastructure, safeguards and security, janitorial and grounds keeping, laboratory services, regulatory compliance, radiological monitoring, administrative support services, and support of other onsite DOE contractors.

In November 1999, WVDP, managed by the West Valley Nuclear Services Company (WVNSCO), was certified as a Department of Energy (DOE) Voluntary Protection Program (VPP) Star site and subsequently recertified in October 2002 and October 2005. WVNSCO was the first company awarded the Legacy of Stars recognition. West Valley Environmental Services LLC (WVES) was formed in 2007 and is comprised of four companies: URS Corporation (formerly United Research Services), Jacobs Engineering Group, Environmental Chemical Corporation, and Parallax. WVES was awarded a 4-year contract by DOE to continue the cleanup of facilities at WVDP on June 29, 2007. Contract transition from WVNSCO to WVES began July 1 and concluded on August 30, 2007. WVES assumed management of WVDP effective September 1, 2007.

Based upon a determination by DOE/WV that the contract changes were not significant enough to require reapplication by the new contractor, a four-person team (Team), led by DOE's Office of Health, Safety and Security (HSS) conducted an onsite review from June 16-27, 2008. The purpose of this review was to conduct the triennial recertification and evaluate WVES actions to maintain its safety programs in accordance with VPP requirements for Star status. During the review, the Team interviewed over 100 employees both formally and during observation of field activities. Interviews included bargaining unit, exempt and nonexempt personnel, subcontractors, supervisors, and managers. The Team determined that generally a strong safety culture has been maintained at WVDP. However, the Team was concerned about the impact of the contract change and the effectiveness of the partnership between managers and workers. The uncertainty surrounding the new contract solicitation and ensuing transition, coupled with past downsizing that has occurred as the mission of the project has evolved, has severely strained what was in years past a model relationship between managers

and employees with both equally responsible and accountable for a record of safety excellence and continuous improvement.

Because of the recent contract change, the Team recommends that WVES continue in DOE-VPP in a transitional status for the next 24 months. During that time, WVES should work with the West Valley Site Office and follow the guidance provided by HSS in the August 26, 2008, memorandum. Further, as part of that transitional process, WVES needs to address those opportunities for improvement identified in this report.

TABLE 1

OPPORTUNITIES FOR IMPROVEMENT

Opportunity for Improvement	Page
WVES should evaluate its activity against the DOE-VPP Manual, parts I and II, and implement applicable specific requirements related to construction/ deconstruction activities.	8
Senior WVES managers and union leaders should leverage the contract negotiation as an opportunity to rebuild their partnership and reaffirm their equal commitment to the principles of VPP at the site. The resulting partnership should be recognized as an effective method to increase safe work and simultaneously contribute to greater efficiency in project work schedules.	8
WVES should strengthen communications regarding personnel actions taken to diffuse conjecture and improve the climate of trust between the company and the bargaining unit.	9
WVES should find ways to empower workers and ensure their participation in the pursuit of continuous improvement.	10
WVES should ensure that employees are fully involved in all aspects of work planning and material procurement. Workers should be allowed and encouraged to participate in self-inspections and walkthroughs to the maximum extent possible.	12
WVES should find ways to encourage employees to raise issues and eliminate workers' fear of reprisal.	12
WVES should encourage the D&D and Waste Processing projects to look to the infrastructure group as an excellent model to emulate, including soliciting input from experienced crafts for innovative solutions.	14
WVES should ensure that the issues raised in the PPE committees are analyzed and addressed in a timely manner.	15
WVES should revisit trending data to ensure root cause analyses are effective.	15
WVES should ensure air sampling and survey data are being audited in a timely fashion and conduct routine assessments to ensure proficiency in this area. For the April 24, 2008, Upper Warm Aisle incident, WVES should ensure closure of critique minutes to include its evaluation for ORPs reportability.	15
WVES should reevaluate the LXA HRA and consider incorporating engineering controls to mitigate the hazard if feasible.	16
WVES should consider the use of temporary postings to define when specific surveys have been performed; thereby, properly addressing each rain/leak event, which could potentially result in contamination events.	17

I. INTRODUCTION

West Valley Environmental Services LLC (WVES) was awarded a 4-year contract by the Department of Energy (DOE) to continue the cleanup of facilities at the West Valley Demonstration Project (WVDP) on June 29, 2007. Transition from the previous contractor, West Valley Nuclear Services Company (WVNSCO), was completed in August 2007; and WVES assumed management of WVDP effective September 1, 2007. In addition to the change of contractors, the scope of work performed at WVDP has changed since the initial Voluntary Protection Program (VPP) application from a management and operating (M&O) contract, to an interim-end state Cost Plus Award Fee (CPAF) contract focused on:

- Contaminated facility decontamination;
- Deactivation and demolition;
- Non-contaminated facility disposition;
- Waste management;
- Operation and maintenance of facilities and infrastructure;
- Safeguards and security;
- Laboratory services;
- Regulatory compliance; and
- Radiological monitoring.

Continued participation in DOE-VPP requires an onsite review every 3 years by the 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. In November 1999, WVDP, managed by WVNSCO, was certified as a DOE-VPP Star site and subsequently recertified in October 2002 and October 2005. Per DOE-VPP requirements, the triennial recertification review is due in 2008. DOE/West Valley (WV) determined that the contract changes that had occurred in 2007 were not significant enough to require reapplication by the new contractor, WVES. Accordingly, the Team, led by HSS, conducted the triennial onsite review from June 16-27, 2008. The Team evaluated WVES actions to maintain its safety programs in accordance with VPP requirements for Star status. During the site visit, the Team observed work activities, attended several work planning and safety committee meetings, reviewed relevant safety documents and procedures, and conducted interviews to assess the strength and effectiveness of WVES health and safety programs.

The Team had contact with over 100 employees both formally and during observation of field activities. Interviews included bargaining unit, exempt and nonexempt personnel, subcontractors, supervisors, and managers. Hazards associated with WVES activities include potential radiological contamination, potential chemical exposure associated with processing activities, thermal stress and dehydration, noise, heavy equipment use, electrical hazards, elevated work, excavation, hoisting and rigging, waste handling, and other industrial hazards. Work observed included deactivation and decontamination activities, waste handling, construction activity, maintenance, and mockups.

II. INJURY INCIDENCE/LOST WORKDAYS CASE RATE

Injury Incidence/Lost Workdays Case Rate (WVES)					
Calendar Year	Hours Worked	Total Recordable Cases	Total Recordable Case Incidence Rate	DART* Cases	DART* Case Rate
2005	737,558	1	0.27	0	0.00
2006	589,158	3	1.02	1	0.34
2007	532,445	8	3.00	1	0.38
3-Year Total	1,859,161	12	1.29	2	0.22
Bureau of Labor Statistics (BLS-2006) average for NAICS** Code # 562			6.5		3.9
Injury Incidence/Lost Workdays Case Rate (WVES Subcontractors)					
Calendar Year	Hours Worked	Total Recordable Cases	Total Recordable Case Incidence Rate	DART* Cases	DART* Case Rate
2005	194,936	1	1.03	0	0.00
2006	168,459	0	0	0	0.00
2007	189,448	1	1.06	0	0.00
3-Year Total	552,843	2	0.72	0	0.00
Bureau of Labor Statistics (BLS-2006) average for NAICS** Code # 562			6.5		3.9

* Days Away, Restricted or Transferred

** North American Industry Classification System

Total Recordable Case Incidence Rate including subcontractors: 1.16

Lost or Restricted Workday Case Incidence Rate, including subcontractor: 0.17

A review of the accident and injury statistics at WVDP over the past 3 years revealed that while rates compare favorably with the industry average, a negative trend occurred in 2007 and a lost-time injury occurred in April 2007 preventing the WVDP from achieving its goal of reaching 5 million accident-free hours. The efforts taken by managers to address this trend appear to be successful thus far, and WVES is expected to reach its new goal of 1 million accident-free hours at WVDP within the next 2 months.

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 clearly communicated policies and goals, clear definition and appropriate assignment of responsibility and authority, adequate resources, and accountability for both managers and workers. Finally, managers must be visible, accessible, and credible to employees.

Overall the safety culture at WVDP is strong. WVES gained significant advantages from the retention of a mature and experienced workforce. An upper management team, comprised of three senior WVNSCO managers and new LLC senior managers, was brought in to address any organizational and process issues resulting from the introduction of the new contract. These efforts began in earnest during contract transition when WVES conducted a Due Diligence Review of the programs and practices that were in place at WVDP. The review was conducted in August 2007 and identified 23 vulnerabilities, four of which were considered to be most significant with respect to the potential for impacting contract objectives. These four included the requirement to improve the work planning and scheduling process in order to strengthen workforce involvement in hazards analysis and to ensure effective schedule integration to achieve contract objectives. Actions taken to address deficiencies in work control, while early in implementation, appear to be sound, but will need to be monitored closely to ensure desired objectives are established and maintained, specifically drawing upon the knowledge of the experienced workforce in planning work and identifying and analyzing new hazards as facility conditions change. The most significant aspect of the changes that have occurred and continue to occur at WVDP is the transition to focused closure activities. In view of the resulting new and increased industrial hazards introduced, the Environmental, Safety, Health and Quality Assurance (ESH&Q) Department was increased to include a separate industrial safety manager (a position formerly combined with the radiation safety manager) and additional safety professionals. The manager has been in place for 8 months; and actions, to date, indicate that dedicated efforts will continue to enhance industrial safety in the closure environment as conditions become increasingly more hazardous.

The impact of the new contract is most directly felt at the middle manager and first line supervisor level. While the project worked to milestones in the past, the project baseline now puts emphasis on monthly milestones with schedule and cost controls. This new focus exerts tremendous pressure on the workforce to not only perform, but to do so with an eye toward efficiency and productivity. Managers must be sensitive to the potential for workers to inadvertently sacrifice safety for schedule.

WVES should be cognizant of the fact that there are significant differences in the activities performed between a traditional operating and management contract and a site closure Decontamination and Decommissioning (D&D) contract. Site closure activities typically involve work activities with facility changing conditions that would normally be considered

construction-like activities. Due to the rapidly changing worksite conditions encountered during construction activities, DOE-VPP establishes different expectations regarding the structure and functions of the labor-management safety committee, hazard assessment processes, site-inspection frequency, and training for construction contractors. While some activities conducted by WVES may not fall within the construction model, WVES should consider adopting the DOE-VPP construction standards for those activities that do.

Opportunity for Improvement: WVES should evaluate its activity against the DOE-VPP Manual, parts I and II, and implement applicable specific requirements related to construction/deconstruction activities.

The Team believes that there are underlying management/labor issues that, if left unresolved, will be cause for concern. The past reputation at WVDP has been one of a strong partnership between managers and employees, with both equally responsible and accountable for a record of safety excellence and continuous improvement. Interviews throughout the workforce suggest that this partnership has been severely strained in the last few years. This is probably due in large part to the uncertainty surrounding the new contract solicitation and ensuing transition, coupled with the downsizing that has occurred as the mission of the project has evolved. Also, with respect to senior managers' initiatives to address safety concerns, workers stated that the new management team is perceived as being "reactionary." For example, after the April 2007 lost-time injury, which involved use of a ladder, the use of ladders was severely restricted and required specific approval to ensure that use of ladders for elevated work was a last resort. Another example occurred after a series of incidents involving forklift operations culminating in a recordable injury; all forklift operators' certifications were suspended pending completion of the incident investigation and root cause analysis. A third example involved the requirement to get engineering approval for every hoisting and rigging lift following a serious reportable incident where a shielded waste box was dropped four feet in late 2007. Interviews with workers regarding these three examples demonstrated a broad belief among the workforce that they were not involved in development of the corrective actions, and that corrective actions were overly restrictive and reactionary. While managers believed the actions were appropriate to prevent future occurrences, they have not been successful in communicating the approach to the workforce.

The current collective bargaining agreement expires as of September 30, 2008, and negotiations for the new contract are underway.

Opportunity for Improvement: Senior WVES managers and union leaders should leverage the contract negotiation as an opportunity to rebuild their partnership and reaffirm their equal commitment to the principles of VPP at the site. The resulting partnership should be recognized as an effective method to increase safe work and simultaneously contribute to greater efficiency in project work schedules.

Employees interviewed were satisfied with the process for setting safety goals for personal accountability. Supervisors provided positive feedback, which promoted enhanced safety awareness. However, many workers interviewed were not satisfied with the way the disciplinary system works. They believe the system is punitive, heavy-handed, and not intended to improve

performance. This "perception" stems from instances where workers were terminated and returned to work after arbitration. These examples were identified through the Team's interviews with many workers and first line supervisors. One case has had a particularly polarizing effect between managers and the bargaining unit. In that case, two workers raised a safety concern regarding potential asbestos material. The workers raised their concerns and were not satisfied that the subsequent tests were sufficiently reliable or accurate based on their training and experience. They were terminated hours later for insubordination against the recommendation of their supervisor, who believed they were properly questioning safety, not refusing to perform work. The next day, the manager reversed his decision and the workers were returned to work. Managers and bargaining unit representatives are having difficulty adjudicating appropriately and effectively the disciplinary process in more obvious matters (i.e., theft of government property, and in another circumstance involving forklift operations when a pump was dropped and work was not stopped and reported as required) as a result of these issues and the perceptions created surrounding those issues.

The theft of government property incident involved one worker who was terminated for taking government property from the site warehouse; an arbitrator overturned the termination and imposed 90 days suspension based on past practices where termination was not imposed on theft.

Opportunity for Improvement: WVES should strengthen communications regarding personnel actions taken to diffuse conjecture and improve the climate of trust between the company and the bargaining unit.

Many of the recent actions taken by senior WVES managers are geared toward reinvigorating the safety program at the project. These include appointing a VPP champion, expanding the incentives and awards program, and building upon the existing committees program. These efforts are credible and must be monitored and updated on a frequent basis to ensure the desired effect of continuous improvement is realized.

Conclusion

WVES managers are clearly committed to safely accomplishing the mission at WVDP. However, workers' perceptions of recent actions and ineffective communication have led to erosion of mutual trust and respect between managers and employees. The perception that managers are overly reactionary to workplace events and injuries underscores the necessity to restore effective lines of communication. WVES must reestablish the strong partnership and trust between managers and employees to reach a culture of safety excellence.

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 participation is in addition to the individual right to notify appropriate managers of hazardous conditions and practices. Field observations and interviews indicate that WVES workers have remained committed to their personal safety, as well as the safety of their coworkers and facility visitors.

WVES employees are involved in safety and health programs through site safety committee membership and participation in awareness activities. Employees have the opportunity to be involved in hazard identification, analysis and safety issue resolution processes, work package review, and the Work Review Group (WRG) discussed in the Worksite Analysis section below.

WVES has several standing committees dedicated to improving the safety culture from top to bottom and bottom to top. These committees provide methods for site employees to voice concerns and to become directly and actively involved in the site safety and health programs. Membership for most of the committees is voluntary and is cross-sectional to the organization. The Team had the opportunity to attend several committee meetings, as well as interview members. Workers interviewed who participate in safety committees appreciate a manager's concern over issues raised during these meetings. Workers freely discussed safety issues during committee meetings. However, safety issues and concerns discussed during safety committee meetings are normally resolved in an informal manner and are not tracked to completion in an issues management system. Some of those interviewed expressed frustration that some identified safety issues have yet to be resolved in a timely manner. Examples of open issues include quality and availability and storage of anti-contamination clothing, and availability of respirators. Furthermore, most of the committees are being led by managers instead of being employee driven; the Central Safety Committee, the Safety Success Team, the As Low As Reasonably Achievable (ALARA) Review Committee, the Radiation and Safety Committee, and the Respiratory Protection Users Committee are all led by managers. Some of the past VPP programs at WVDP were essentially employee-run programs with high level managers championing the committee and effectively pursuing issue resolution. WVES should concentrate on once again empowering front-line workers to drive the safety program so that both the managers and employees are involved in more of the decisionmaking process; thereby, improving the communication of those decisions to the workforce.

Opportunity for Improvement: WVES should find ways to empower workers and ensure their participation in the pursuit of continuous improvement.

The Team attended meetings of the following safety committees:

- *Central Safety Committee*

  The Central Safety Committee, chaired by the Project Manager, was established over 10 years ago by the WVNSCO President. The committee promotes accountability at the upper management level by reviewing safety performance, safety committee activities

and performance trends, and by acting as a last point of resolution for any safety committee's concerns. The observed Central Safety Committee and a review of those meetings minutes demonstrate excellent participation and open dialog between workers and managers. Several new safety issues were discussed by the workers, and management committed to resolve them.

- *Safety Success Team*

  The Safety Success Team, an employee-driven committee chaired by management, was established in 1994 and acts as the umbrella for all employee safety teams. The Safety Success Team provides awareness activities for all employees. The observed Safety Success Team meeting demonstrated professionalism and excellent worker participation. The Safety Success Team has proposed a budget of $11,000 to recognize the workforce for 1,000,000 hours without a lost-time injury, a milestone expected to be reached in August 2008. The Safety Success Team approved plans to recommence the Safety Team walk down program with two workers each week observing planned work activities and then reporting observations back to the Safety Success Team.

- *Personal Protection Equipment (PPE) Committee*

  The PPE Committee met to discuss various issues concerning the availability of needed sizes, the ineffectiveness of the maximum/minimum system, vendor supply problems, the lack of storage, etc. There was good interaction between team members, but in some cases, no immediate resolution to some issues. The team could not provide minutes from previous meetings.

Beyond the standing safety committees, WVES provides many methods for employees to voice their concerns related to safety or to suggest improvement ideas in the area of safety. These programs consist of proceduralized systems, as well as the use of ad hoc teams to address specific issues. These systems and programs are available to all WVES employees and are communicated via the site newsletter, bulletin boards, and safety talks.

- *Safety Achievers Program*

  The Safety Achievers Program recognizes employees or subcontractors for significant safety accomplishments or ideas. The winner receives a monetary award and a prime parking spot. This program is conducted on a monthly basis. Nominees not chosen as the winner are added to the Weekly Safety Recognition Program. Interview results indicate that workers are appreciative when they are recognized by management for safety achievements.

- *Weekly Safety Recognition Program*

  The Weekly Safety Recognition Program recognizes WVES employees and subcontractors for safety accomplishments, ideas, and improvements. This program is a spot award program where employees who are recognized are entered into a weekly drawing. This program is conducted on a weekly basis. Interview results indicate that

workers are appreciative when they are recognized by management for safety achievements. Over 170 personnel have been nominated and rewarded since March 2008 for raising safety concerns or addressing safety issues.

- *The VPP/Integrated Safety Management System (ISMS) Task Team*

  A team assembled to conduct the VPP annual evaluation and act as primary employee reviewers of the application. This team assists in preparations for the onsite review and employee awareness activities. The VPP/ISMS team is not a standing committee that continuously promotes VPP tenets and does not participate in Voluntary Protection Program Participants' Association (VPPPA) activities. One WVES VPP team mentor has participated in VPP mentoring activities at other DOE sites. WVES has recently appointed a management sponsor/champion for this team.

Although WVES has several mechanisms designed to foster employee involvement, interviews revealed that in some cases workers do not believe they are adequately involved. For example, front-line workers indicated they have very little contribution in initial planning for new or altered processes and material, and they are no longer involved in the walking down of procedures due to limited manpower resources. Some interviews revealed that most front-line workers are not involved in self-inspections and that only the front-line workers who are on the Safety Success Team get an opportunity to perform walk-throughs. Some worker interviews indicated a reluctance to bring up major issues for fear of reprisal. Some felt that they could fix small problems, but could not formally raise an issue that might delay work.

Opportunity for Improvement: WVES should ensure that employees are fully involved in all aspects of work planning and material procurement. Workers should be allowed and encouraged to participate in self-inspections and walkthroughs to the maximum extent possible.

Opportunity for Improvement: WVES should find ways to encourage employees to raise issues and eliminate workers' fear of reprisal.

Conclusion

Despite WVES having mechanisms in place that should maximize employee involvement in all aspects of the safety program at WVDP, the level and degree of involvement has declined across the workforce. Managers, supervisors, and workers must work to reestablish the strong partnership that once existed at the site.

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 mitigative measures during work planning to anticipate and minimize the impact of such hazards.

WVES conducts hazards analyses as part of the work planning process for proposed activities before work has begun. Both normal operations and process upset conditions are considered during the hazard analysis. Complexity, risk, level of documentation needed, and the number of departmental interfaces involved in the task are all evaluated during the analysis process, which is then used to determine the necessary work controls that are applied. Mechanisms and documents used to analyze hazards include the Hazards Screen checklist, WRG (discussed below), worker/supervisor knowledge, Industrial Work Permits, and Radiation Work Permits (RWP). Hazard Controls Specialists (HCS) are designated by the cognizant managers in ten specialty areas, including criticality safety, environmental affairs, emergency management, facility management, fire protection, industrial hygiene and safety, plant systems operations and shift supervisor, radiation protection, unreviewed safety question determination originator, and Waste Shipping and Disposal. HCS have specific qualification criteria and are involved as appropriate based upon the magnitude and the nature of the hazards involved.

WRG has been developed at WVDP to assist with work instruction development and hazard analysis. WRG is governed by WV-128, *Work Review Group,* and is an effective tool to ensure work instruction packages are ready to be released for work. WRG is a multidisciplinary team from various operations and support groups (including safety and health, environmental, radiation protection, and quality), which provides input for planning work and determines that a final work package is ready to be worked. Its duties include performing hazards screening, reviewing work instructions for adequacy and completeness, and determination of type of work instruction needed. Craft involvement has significantly reduced in past months apparently due to the limited workforce and the increase in work in contaminated areas, which is time consuming. The result has been a tendency to not impact entry work by “pulling” experienced crafts from day-to-day work. As a result of questions raised by the Team, WRG leaders indicated that efforts will be taken to assure experienced craft involvement will begin again. This is significant due to the fact that experienced craft will provide effective work experience and more significantly, operational status information that will address day-to-day and week-by-week changes expected as a result of the ongoing D&D activities.

WVES is organized into two basic projects, which are Waste Management and High Hazard Facilities and Site Projects (which includes Infrastructure Operations and Maintenance). Interviews with Infrastructure Operations and Maintenance personnel indicated an effective model for performing work with effective management and craft involvement. Examples given demonstrated an emphasis on innovative problem solving between crafts, engineering, and

management. These workers are commended on finding novel and effective solutions to problems in the field that make work safer and more effective. One notable example involved developing vacuum filter cans for asbestos areas. In a second example, the maintenance operators avoided costly excavation work adjacent to the main process building for a repair of an underground fire water leak. While discussing the problem, one of the craftsmen explained that the leaking line was a later addition to the system; and based upon his facility experience, recognized that the leak could be isolated without the need for excavation. His innovative solution saved the operations group funding and avoided unnecessary potential hazard exposures.

Opportunity for Improvement: WVES should encourage the D&D and Waste Processing projects to look to the Infrastructure group as an excellent model to emulate, including soliciting input from experienced crafts for innovative solutions.

ALARA trending occurs annually and includes the number and square footage of contaminated areas, the number and location of personnel contaminations, personnel dose levels, etc. Radiological exposures are trended on a quarterly and annual basis. Injury and illness trending occurs on a weekly basis. While the radiological trending meets requirements, document reviews and personnel interviews indicate an opportunity to strengthen the analysis and reporting of nonreportable contaminations and high airborne events that exceed respiratory or RWP limits, etc., are not being trended separately from the Occurrence Reporting and Processing System (ORPS) reportable events. The information that could be utilized from this type of analysis could be used to set a path for improvement. The overall trend for contamination cases has risen recently, suggesting that root cause analysis performed on leading indicators may not be effective.

WVES policy states that "For imminent danger situations, each employee has the right and responsibility to refuse to perform a job the employee perceives as unsafe." Most workers interviewed indicated that they would stop work immediately if they found a condition that posed imminent danger to themselves or coworkers. Many employees stated that they felt comfortable reporting issues to their direct supervisor. However, some interviews revealed a perception that there is no reliable system for employees to notify upper management of conditions or practices that appear hazardous or to receive a timely and appropriate response without fear of reprisal. Several workers interviewed said they were reluctant to question management concerning issues that did not pose imminent danger, but that might delay work (chilling effect) for fear that they may be subject to reprisal (punished). They stated that this, in part, stems from an incident a year ago where two workers were relieved of their responsibilities for failing to follow the stop-work policy and notify management after they dropped a large pump (see Management Leadership section).

Some issues that the Team brought to the attention of WVES during the review had yet to be mitigated at the time of completion of the assist visit. For example, the Team noted that a significant portion of stored PPE was in poor condition (frayed, holes, tears, improper fittings, etc.). Furthermore, WVES has a practice of altering (cutting holes in) the second layer of PPE to allow for cooling vest hoses, but could not produce any programmatic documentation or training that shows how they are managing this process to ensure workers are not at risk for contamination cases. WVES responded that mandatory pre-use inspections by the workers who

will be wearing PPE should cause unusable PPE to be thrown out, and the PPE committee was meeting on June 19, 2008, to discuss the issues. The PPE committee did meet as scheduled and identified numerous issues. Among these were the inefficiency of the max/min procurement system and vendor supply issues, including inadequate supply of PPE and other tools needed for work. There was no closure as to how any of these issues would be resolved.

Opportunity for Improvement: WVES should ensure that the issues raised in the PPE committees are analyzed and addressed in a timely manner.

Some opportunity exists for employees to participate in ESH&Q injury and illness investigation teams. Written reports with incident causes and corrective actions are available. Although corrective actions have been identified, the number of contamination cases has recently increased.

Opportunity for Improvement: WVES should revisit trending data to ensure root cause analyses are effective.

The air sampling and monitoring program consists of periodic surveying/sampling of the atmosphere in the worker's environment and real-time monitoring that warns workers should a significant release of airborne radioactive material occur. A total of 114 fixed and continuous air monitors are located throughout the site to monitor for any airborne radioactivity. Further information and the technical basis for the program can be found in WVDP-216, *WVDP Workplace Radiological Air Sampling and Monitoring Program and Technical Basis Document*. While the program is intact, further emphasis needs to be placed on ensuring that personnel follow procedures to properly identify, assess and mitigate airborne hazards. Moreover, results are not always audited in a timely matter. For example, critique minutes and the accompanying Issue Report (IR) for the contamination incident that occurred on April 24, 2008, in the Upper Warm Aisle were still pending as of the time of this review.

Opportunity for Improvement: WVES should ensure air sampling and survey data are being audited in a timely fashion and conduct routine assessments to ensure proficiency in this area. For the April 24, 2008, Upper Warm Aisle incident, WVES should ensure closure of critique minutes to include its evaluation for ORPs reportability.

Conclusion

WVES has adequate worksite analysis processes and procedures in place. Hazard identification is thorough, and a program to improve housekeeping was underway. WVES continues to meet the requirements of the Worksite Analysis tenet.

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, and/or PPE). Equipment maintenance, PPE, 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, and followed by everyone in the workplace to prevent mishaps or control their frequency and/or severity.

Observations and interviews confirmed that prior to doing any actual work pre-job briefings are attended by all employees involved with the work package field work. The pre-job briefing is given by the job supervisor who relays hazards and unusual circumstances relating to the work (heat/cold stress, chemical hazards, physical conditions, etc.) and each person's responsibilities. This also provides employees the chance to ask questions about anything they do not understand. The pre-job briefings observed by the Team were very thorough and well done. Many of those interviewed said that in the past tabletop validation of revised procedures was used more than it is used now. Prior to complex hazardous work, or at the request of employees performing a task, a mockup may be used to familiarize personnel with procedures, the process and/or equipment, and the interfaces within the phases of the task. Many workers interviewed said that the use of mockups had significantly decreased over the last year. Workers recognize that budget constraints and changing mission may be a cause for fewer mockups. While on site, the Team noted two mockups. These were hands-on Trac-saw vendor training for 10 employees in Cleveland, Ohio, and a scaffolding mockup for asbestos removal on a 40-foot storage vessel located in a processing cell. The Team believes that mockups are still utilized when necessary, but due to the change in project focus, fewer mockups will occur than when WVDP was operating as a Demonstration Project.

The appropriate hierarchy of controls includes the use of engineering controls as the first option, secondly administrative controls, and as a last line of defense, PPE. All controls are being used at WVES. However, in some instances, administrative controls are being used when engineering controls may be a better option. For example, at the high radiation area (HRA) in the Lower Extraction Aisle (LXA) only administrative controls are used. WVES procedure recommends that the area "should" be locked with engineering controls, as long as radiation levels are between 100 and 1000 mrem/hr. The controls established meet the requirements of the regulation, but are not consistent with WVES practice in other similar HRAs. All other HRAs are locked. Managers stated that they would revisit the manner in which this HRA is controlled. The maximum whole body dose rate is reported to be 180 mrem/hr.

Opportunity for Improvement: WVES should reevaluate the LXA HRA and consider incorporating engineering controls to mitigate the hazard if feasible.

Some employees expressed that there is inadequate storage space for PPE, as well as inadequate supply for work. Employees attribute supply issues to the ineffectiveness of the Max/Min procurement system. Observations showed that a portion of PPE was frayed or torn. Workers

were observed using PPE that was torn and undersized. Workers understand that they have vendor/supply issues. The PPE review group is currently addressing this problem.

Due to the nature of D&D activities, there is a heavy dependence on the use of PPE in highly contaminated areas to mitigate the contamination hazard. The non-ORPS reportable skin contamination case on April 3, 2008, revealed that "the knees were dirty on the paper suit and there were high levels of beta contamination on the PPE in the location above where the clothing and skin contamination took place." The outer paper suit had 100 mrad/hr beta-gamma. Interviews revealed that it is common practice for operators to kneel or crawl around in anticontamination garments. In its investigation of the event, WVES identified that radiological practices, coupled with this amount of contamination on PPE along with sweating, could contribute or lead to contamination cases. Corrective actions have been put in place to ensure full radiological characterization prior to entries, to reemphasize the importance of decontamination and fixation prior to entries, and to control work scope during entries.

The Team did note the effective use of unique engineering controls to mitigate hazards in high radiation/contamination areas. One such example was the use of the remote controlled Brokk with a manipulating arm to facilitate D&D activities in HRAs. Other approaches to mitigate potential hazard exposures included the application of grout on a highly contaminated cell floor and the application of fixative to working surfaces at the end of the workday to reduce alpha contamination for work continuing the following day.

At the Hanford Site, the Plutonium Finishing Plant (PFP) facility has utilized 3D imaging technology with some success in its D&D activities. Other VPP participants performing D&D activities may have adopted similar technology to reduce employee exposure. HSS is available to assist if WVES wishes to explore this option. WVES should consider adopting 3D imaging technology for future D&D activities to further minimize employee exposure to hazards. WVES should consider working with PFP in a VPP mentoring role to evaluate this technology for potential application at WVDP. In addition, WVES should pursue other DOE-VPP participants performing D&D activities for additional mentoring opportunities.

Roof leaks in the main process building are not being controlled in an effective manner. Operators are cognizant of the fact to avoid walking in puddles resulting from roof leaks. However, frequent observations in the process building did not reveal a comprehensive approach to assuring leaks did not represent potential contamination to personnel. In cases where radiological control technicians surveyed the resulting puddles in the process building, there is no formal notification policy in place to assure personnel that no contamination is present. Temporary postings could be utilized to define when specific surveys have been performed, thereby addressing each rain/leak event.

Opportunity for Improvement: WVES should consider the use of temporary postings to define when specific surveys have been performed, thereby properly addressing each rain/leak event, which could potentially result in contamination events.

The Maintenance Implementation Plan is current and in good standing. Additionally, the Preventive Maintenance (PM) Program has been comprehensively reviewed, and unnecessary

PMs have been removed as a result of the new contract scope. Maintenance crafts were effectively used to perform the reduction of PMs deemed unnecessary to the current mission. WVDP has adopted a "Run to Failure Initiative," and the initiative has been well-thought-out with craft involvement to assure appropriate emphasis on necessary components essential to completing the new mission.

With respect to the medical program, the onsite Registered Nurse has been proactive in ensuring her availability to both day and night shifts to address their concerns. Her availability is not limited to solely work-related issues, but encompasses workers' concerns for their health overall. Her initiative is commendable and represents the expectation of a comprehensive VPP approach in this area.

Conclusion

WVES has effective means to prevent and control hazards in the facilities at WVDP. The hierarchy of hazard elimination, engineered controls, administrative controls, and PPE was clearly evident. Team observations of work, attendance at various planning meetings, and formal and informal interviews of employees and managers confirmed that WVES continues to meet the requirements of the Hazard Prevention and Control tenet.

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, that personnel recognize hazards they may encounter, and that they are capable of acting in accordance with management expectations and approved procedures.

Training is provided to ensure employees understand their jobs, recognize the potential hazards and necessary controls, and are aware of any safety monitoring requirements. Training activities/courses to satisfy the health and safety requirements of employees, supervisors, and managers are established and identified on form WV-1392, *WVDP Health and Safety Training Determination*. This form lists all of the health and safety job codes, job titles, and course activity number and requalification interval. Every employee, supervisor, and manager is required to have a current form WV-I392 on file in the Training Records Management System (TRMS).

Each health and safety training activity course is evaluated by the appropriate cognizant manager or designee and updated based on identified changes to policies, procedures, and regulatory requirements. Reviews occur annually. Training is evaluated through the Training and Development cross-training assessment process, through the cognizant manager review, or the trainer review to current standards and lessons learned update. Each activity course has appropriate job elements, practical tests, drills, and exams to ensure that the training requirements and course objectives are met. Post-training evaluations are performed to test knowledge retention and address areas requiring additional training. This also ensures that employees retain the course information that has been taught.

All health and safety training courses have a defined requalification interval. Each employee, supervisor, and manager is notified 45 days prior to requalification expiration via the TRMS tracking process to allow adequate requalification training to take place. Each attendee is required to sign an attendance sheet, form WV-1303, for each course completed. This completed attendance form becomes the record document that is transmitted to TRMS where all employee, supervisor, and manager training records are updated and on file. TRMS is linked to the badging system, which alerts the employee and security personnel of training delinquencies. The TRMS tracking process is an industry best practice and helps ensure that workers are qualified and trained prior to performing work.

On-the-Job training is conducted as a function of the qualification process. Through a practical review of task performance, personnel are signed off as they complete their understanding of the equipment and processes they will be held responsible for once fully qualified.

Human Performance Initiative training was provided to employees in 2007. Employees learned to review and correct employee actions through a DO IT process, a positive reinforcement approach to changing behaviors and actively caring for each other within work teams. WVES offers employees Safety Trained Supervisor (STS) Certification in Construction and has over 62 trained STS. WVES has trained 50 required workers with Automated External Defibrillator/ cardiopulmonary resuscitation training and 50 additional volunteers.

Personnel participate in a continuing training program in accordance with T-65, *Continuing Training*. The program consists of monthly topics presented by subject matter experts, required reading, and self-training time. Two-year schedules are developed and submitted to the Training Coordinators for approval on an annual basis.

Supervisors and managers are required to follow the same health and safety requirements as employees. In addition, Manager and Supervisor Leadership Training is provided to new managers and supervisors to enhance knowledge and effectiveness in their positions. A part of this training includes safety responsibilities in implementing and enforcing health and safety requirements. This emphasizes employees' rights, managers' responsibilities, and tools for demonstrating leadership in safety.

Radiation protection supervisors receive specialized training beyond that of the technicians and must pass written exams and oral boards biennially. Supervisors responsible for performing radiological work are required to attend ALARA and containment training to familiarize themselves with the concepts and application necessary to deal with radiological hazards.

Interviews of the workforce and a spot check of training documentation confirm that workers are completing required training. However, due to reduction in budget and support infrastructure, Team observations identified a reduction in the level of training compared to what was previously conducted at WVDP. There is an increased use of required reading and computer-based training and less emphasis/use of formal training and hands-on training. Although the use of mockups has declined as the facility shifted from operations to D&D activities, WVDP does utilize mockup training to reduce exposures for certain evolutions. Examples include the track saw offsite training and the mockup for the asbestos removal scaffolding installation discussed in the Worksite Analysis section.

Conclusion

Personnel are well trained at WVDP. While not as extensive as in the past, the training does provide a solid foundation for maintaining a safe working environment. WVES continues to meet the requirements of the Safety and Health Training tenet.

VIII. CONCLUSIONS

WVDP has been a DOE-VPP Star site since 1999. When WVES assumed management of WVDP in September 2007, it gained an experienced workforce with excellent safety culture. The new management team has demonstrated its commitment to building upon this culture and instilling the expectation of continuous improvement throughout all WVDP activities. Team observations support that workers are generally doing work safely and looking out for each other. Because of the contract change, the Team recommends that WVES continue in DOE-VPP in a transitional status for the next 24 months. During that time, WVES should work with the West Valley Site Office and follow the guidance provided by HSS in the August 26, 2008, memorandum. Further, WVES needs to address those opportunities for improvement identified in this report. In order to retain Star status at the end of the interim period, WVES must successfully address the opportunities for improvement detailed in the Management Leadership and Employee Involvement sections of this report. While no formal corrective action plan is required to address the opportunities for improvement detailed in the Worksite Analysis and Hazard Prevention and Control sections of this report, WVES is expected to consider and specifically address them in its annual status report. To that end, HSS stands ready to provide assistance as requested. Within the 24-month transitional period, HSS will conduct a followup review and make a final determination regarding WVES participation in DOE-VPP.

Appendix A

Onsite VPP Audit Team Roster

Management

Glenn S. Podonsky
Chief Health, Safety and Security Officer
Office of Health, Safety and Security

Michael A. Kilpatrick
Deputy Director for Operations
Office of Health, Safety and Security

Patricia R.Worthington, PhD
Director
Office of Health and Safety
Office of Health, Safety and Security

Bradley K. Davy
Director
Office of Worker Safety and Health Assistance
Office of Health and Safety

Quality Review Board

Michael Kilpatrick	Patricia Worthington
Dean Hickman	Robert Nelson

Review Team

Name	Affiliation/Phone	Project/Review Element
Frank Greco	DOE/HSS (301) 903-5522	Team Lead Management Leadership
Mike Gilroy	DOE/HSS	Worksite Analysis Hazard Prevention and Control
Gary Smith	Energx TWPC	Employee Involvement Safety and Health Training
Adrienne Saulsberry	WSRC	Worksite Analysis Hazard Prevention and Control